Revision: #

Purchasing Agent: Terri O'Toole
Phone: (801) 538-3147
E-mail: totoole@utah.gov

Item: HIGHWAY CCTV SURVEILLANCE SYSTEMS

Vendor:	01538H	Utah Controls, Inc. 11075 South State Street Bldg. #1 Sandy, UT 84070
Internet Homepage:		www.utahcontrols.com
Contact:		Brian Dahl
Telephone:		801 990-1950
Fax number:		801 990-1955
Email:		brian.dahl@utahcontrols.com
Usage Report Contact:		
Telephone:		
Fax number:		
Email:		
Reporting Type:		
Brand/trade name:		Pelco
Price:		See attached price schedule
Terms:		NET 30
Effective dates:		07/20/06 through 07/20/07
Remaining renewal options:		Two 1-year renewals
Days required for delivery:		3 – 7 Days ARO
Price guarantee period:		3 Months
Freight:		
Minimum order:		None
Min shipment without charges:		
Other conditions:		Contract potentially renewable until 7/20/2009

This is a new contract

BID NO. TO7900

This contract covers only those items listed in the price schedule. It is the responsibility of the agency to ensure that other items purchased are invoiced separately. State agencies will place orders directly with the vendor creating a DO in Finet. Agencies will return to the vendor any invoice which reflects incorrect pricing

CCTV Camera Surveillance System Pricing Sheet

ITEM	PRICE	UNIT
1. Dome CCTV Camera System (3.0)	$1,835.00	Each System
2. Dome Camera Cable Assembly (5.0)	$160.00	Per Cable Plus
	$1.65	Per Foot
3. Integrated CCTV Camera and Positioner System (4.0)	$2,469.00	Each System
4. Integrated Camera Cable Assembly (5.0)	$165.00	Per Cable Plus
	$1.65	Per Foot
5. NTCIP Upgrade Kit (2.4.5) (Optional)	$55.00	Each System
6. Digital Video Upgrade Kit (2.4.6) (Optional)	$750.00	Each System
7. 2-Year Extended Warranty (Optional)	$145.00	Per Camera
8. Training Session (6.0)	$200.00	Lump Sum
9. Engineering Field Service (8.0)	$55.00	Per Man Hour
10. Specialized Test Equipment and installation Tool Kit (9.1.2)	$650.00	
11. Discount on related Equipment in Vendor Catalog	25%	

FINET COMMODITY CODE(S): For agency use only.
55091000000 - VEHICLE DETECTORS

REVISION HISTORY:

Bid #TO7900 - CCTV Camera Surveillance System

Creation Date	Jun 16, 2006	End Date	Jul 5, 2006 2:00:00 PM MDT
Start Date	Jun 16, 2006 12:42:19 PM MDT	Awarded Date	Jul 19, 2006

TO7900-1-01 .

Vendor	Unit Price	Qty/Unit	Total Price	Attch.	Docs
Western Signal Inc.	First Offer -	1 / each		Y	Y
Agency Product Code: Agency Notes:		Supplier Product Code: Vendor Notes:			
Utah Controls	First Offer -	1 / each			Y
Agency Product Code: Agency Notes:		Supplier Product Code: Vendor Notes:			

Vendor Totals

Utah Controls $0.00

Bid Contact Brian Dahl
brian.dahl@utahcontrols.com
Ph 801-990-1950

Address 11075 S State St Bldg#1
Sandy, UT 84070

Agency Notes:

Vendor Notes:

Western Signal Inc. $0.00

Bid Contact Steve O'Connor
westernsig@aol.com
Ph 303-462-2530
Fax 303-462-2533

Address 1500 West Cedar Ave.
Denver, CO 80223

Bid Notes Please See attached specifications, pricing and documents.

Agency Notes:

Vendor Notes:

* * All bids/proposals submitted for the designated project are reflected on this tabulation sheet. However, the listing of the bid/proposal on this tabulation sheet shall not be construed as a comment on the responsiveness of such bid/proposal or as any indication that the agency accepts such bid/proposal as being responsive. The agency will make a determination as to the responsiveness of the vendor responses submitted based upon compliance with all applicable laws, purchasing guidelines and project documents, including but not limited to the project specifications and contract documents. The agency will notify the successful vendor upon award of the contract and, as according to the law, all bid/proposal responses received will be available for inspection at that time.

Vendor: **Utah Controls**

State of Utah
Invitation to Bid

Company Name **Utah Controls Inc**			Federal Tax Identification Number **87-0496337**
Ordering Address **11075 S State St Bldg#1**	City **Sandy**	State **UT**	Zip Code **84070**
Remittance Address (if different from ordering address) **Same**	City	State	Zip Code
Type b Corporation e Partnership e Proprietorship e Government		Company Contact Person **Brian Dahl**	
Telephone Number (include area code) **801-990-1950**	Fax Number (include area code) **801-990-1955**	Email Address **brian.dahl@utahcontrols.com**	
Discount Terms(for bid purposes, bid discounts less than 30 days will not be considered) **N/A**		Days Required for Delivery After Receipt of Order (see attached for any required minimums) **3-7 Days ARO**	
Brand/Trade Name **Pelco**		Price Guarantee Period (see attached specifications for any required minimums) **Min of 3 months per bid docs.**	
Minimum Order **N/A**		Company's Internet Web Address **www.utahcontrols.com**	
The undersigned certifies that the goods or services offered are produced, mined, grown, manufactured, or performed in Utah. Yes b No e . If no, enter where produced, etc.			
Offeror's Authorized Representative's Signature **Brian Dahl**		Date **7-5-06**	
Type or Print Name **Brian Dahl**		Position or Title **Security Sales**	

i MPath Networks Inc.

CCTV Related Equipment

User Price List

Product Code	Description		User Price
Enter Part Number	Description		
i-Volution Series			
i4000 series (an i-Volution power adapter is needed)			
900-007076-001	i4000 VIDoIP/MPEG Encoder		$5,565
900-007095-001	i4000 VIDoIP/MPEG Encoder (Optical, ST-II)		$6,500
900-007095-002	i4000 VIDoIP/MPEG Encoder (Dual Optical, ST-II)		$7,750
900-007274-001	i4100 VIDoIP/MPEG Encoder with single Ethernet interface (no Ethernet Switch)		$4,100
900-007099-001	i4200 Electrical to Optical Converter		$1,900
900-007326-001	i4402-S Encoder (2:1 video / 1 audio channel)		$5,200
900-007328-001	i4400 Decoder (1 video / 1 audio channel)		$4,800
900-007099-002	i4222 Electircal to Optical Converter (Dual Optical)		$3,000
i1000 series (an i-Volution power adapter is needed)			
900-007275-001	i1000 VIDoIP/MPEG Encoder with dual video and data ports stand alone		$6,400
900-007282-001	i1000 VIDoIP/MPEG Decoder with dual video and data ports stand alone		$5,900
i-Volution Power Adapters used for i4000 and i1000			
101-007242-001	i-Volution DC lead to external 12VDC source		$10
900-007079-001	i-Volution Power Adapter N/A 110VAC		$69
900-007079-002	i-Volution Power Adapter Int'l. 220VAC. (No AC cord for Inl't)		$63
12 slot VSG Chassis Kit (7 RU)			
900-007105-001	Video Surveillance Gateway Kit 110VAC (12 slot chassis)		$5,808
900-007105-002	Video Surveillance Gateway Kit 220VAC (12 slot chassis)		$5,808
	VSG kits include single AC input chassis, 1 PS-350, blanking plates and fan tray.		
	Customer specific configuration is required at time of the order to determine the number of blanking plates needed.		
12 Slot VSG Chassis and Accessories (7 RU)			
900-007084-003	Video Surveillance Gateway Chassis (Dual AC inputs, no power supply included) 12 Slots		$2,400
900-007084-004	Video Surveillance Gateway Chassis (Single AC input, no power supply included) 12 Slots		$2,300
900-006991-002	Video Surveillance Gateway PS-350-UAC Power Supply, 350W, 90-264VAC, 47-63Hz		$1,955
900-901000-000	Rackmount Fan Tray 110VAC (1RU, 900 CFM)		$1,500
900-901000-001	Rackmount Fan Tray 220VAC (1RU, 900 CFM)		$1,500
900-007062-001	VSG 23" Rack Mount Kit		$250
3 slot Video Surveillance Gateway Lite Chassis			
900-007250-001	VSG Lite Chassis (Dual AC inputs, no power supply included) 3 Slots		$2,400
900-007251-001	VSG Lite Power Supply, 90-264VAC, 47-63Hz		$400
VSG Components			
900-006890-003	Video Surveillance Gateway VIDoIP/MPEG Encoder (2-channels)		$5,400
900-006929-002	Video Surveillance Gateway VIDoIP/MPEG Decoder (2-channels)		$5,000
510-007106-001	Video Surveillance Gateway Blanking Plate (12 Slots per VSG or 3 Slots in VSG Lite chassis)		$40
ClientVue Software Package			
900-007078-001	ClientVue single user license (one per station)		$275
Available May 2004	ClientVue MVT (MultiView & Touring) single user license (one per station)		$1,300
	Contact iMPath Networks for Volume License Pricing		
Manuals			
971-007112-001	i4000 User Manual		$65
971-007285-001	i1000 User Manual		$65
971-007108-001	Video Surveillance Gateway User Manual		$65
	One copy is included per order regardless of the quatities of units purchased. Order additional copies of manual if required. Soft copies are available on request.		
I-Volution TeleVue NMS			
TeleVue Software Packages			
900-007169-001	**TeleVue Release 6.0 Software License**		$13,455
	Regardless of the size of your network, the TeleVue software package is a one time cost. This package includes:		
	— TeleVue Applications Manager Software (one site license + CD-ROM)		
	— TeleVue On-Line Help Documentation (CD-ROM)		
900-007170-001	**TeleVue Release 6.0 Software License Upgrade**		$4,000
	For existing owners of an earlier version of the TeleVue system. This package includes:		
	— TeleVue Applications Manager Upgrade Software (one site license + CD-ROM)		
	— TeleVue On-Line Help Documentation (CD-ROM)		

VICON Product Specification

SURVEYORVFT

TCP/IP, Fiber and Twisted-Pair High-Performance Camera Dome

- **RS-422/485 standard, available with TCP/IP, fiber and UTP transmission card options**
- **ViconNet (TCP/IP) converts to digital video for viewing and control on Kollector Elite and Pro Digital Video Recorders and ViconNet workstations**
- **Fiber-optic option transmits video and control data to fiber optic receivers over long distances**
- **UTP option transmits video up to 3000 ft over unshielded twisted pair**
- **DIP-switch selectable competitive camera dome protocols eliminate the need for external translators**
- **On-board memory retained in housing; designed for easy installation and servicing**
- **360° continuous rotation pan-and-tilt drive with a variety of color domes available**
- **Color 22X, 22X with ExView™ and day/night 23X camera options, maximum 276X optical/digital zoom**
- **Indoor or outdoor, ceiling or pendant configurations**
- **Digital Slow Shutter feature for enhanced low-light applications**
- **Wide Dynamic Range (23X) provides best contrast for high quality images**
- **Outdoor version provides environmental protection, pressurized and maximum security (MSH) versions available**
- **Convenient integration into any existing CCTV matrix system**
- **GUI provides configuration of all features**

SurveyorVFT Camera Dome System is a compact, lightweight and intelligent security device comprised of a camera, pan/tilt drive, receiver and CPU-based electronics all in an attractive and covert enclosure. SurveyorVFT can be programmed and operated using any V1300X/V1400X/1500 series of NOVA™ communication devices and enhanced VicoaxII protocol. It is available in a variety of indoor and outdoor versions and can be configured with a variety of camera and lower dome types. Refer to Table 1.

The basic SurveyorVFT provides video transmission over coaxial cable. Options are available that provide TCP/IP (ViconNet), fiber-optic and twisted-pair (UTP) video transmission. Each of these options includes an interface board that allows the specific type of video transmission. An appropriate receiver is required.

The ViconNet option provides support for network connection to Kollector Elite Digital Video Recorders and ViconNet Workstations via ViconNet software. A pre-installed LAN interface board allows direct plug-in to a system network switch. Video from the camera is available to all network recorders and workstations for live view and recording.

The Vicon SurveyorVFT camera dome can be used in conjunction with competitive PTZ drivers through DIP-switch selection.

The SurveyorVFT is designed for easy snap-in installation. The drive simply snaps into the housing. When removed, the housing retains all programmed functions in its on-board memory. The customer interface board snaps down for easy access and the PCB provides removable terminal blocks for simple wiring connections.

There are three camera types available, each with NTSC and PAL versions. The basic model is a 22X high-resolution camera/lens. Another 22X model is available with ExView CCD technology (22XEX). The third version is a 23X day/night camera/ lens. See Technical Information and Table 3 for camera features. Several mounting accessories are available to fit almost any installation need. Refer to Table 1 for specific SurveyorVFT models and mounting options.

There are 79 programmable preset positions, each having a variable preset solve accuracy of 0.1º. Programmable azimuth and compass is displayed on screen. There are 8 compass headings (N, NE, E, SE, S, SW, W, NW) (22XEX/23X only) and pan and tilt degrees displayed with a 1º resolution. 16 individual programmable privacy masks are available. Motion detection capability is available on day/night models. For each preset, there are 6 programmable zones for motion detection, each having 3 sensitivity levels.

Alarm inputs can be individually programmed. Programmable titling is provided for the camera and every preset position, alarm, relay and sector and titles can be enabled or disabled individually or globally.

Eight tours (4 on 22X) are available with 32 steps per tour. Pan and tilt functions are externally controlled, continuously variable and programmable to be enabled or disabled. There is a programmable autopan function.

Vicon strongly recommends the use of uninterruptible power supply systems (UPS) to prevent voltage fluctuations that can affect operation, cause video loss and damage to the equipment.

Vicon Product Facts	FC CE	Model No: SurveyorVFT	Product Code: See Table 1	SEC: 3	SPEC: V134	REV: 405

Vicon part number 8009-7134-01-01

Product specifications subject to change without notice.

Product Specification

Model Number	Product Code	Environment/ Cable Type	Camera Type/Format	Mount Type	Optical Zoom/ Total Zoom	Lower Dome Type
SVFT-C22	8701-00	Indoor/Coax	Color/NTSC	Ceiling	ExView 22x/264x	Smoked
SVFT-C22C	8701-01	Indoor/Coax	Color/PAL	Ceiling	ExView 22x/264x	Smoked
SVFT-P22	8704-00	Indoor/Coax	Color/NTSC	Pendant	ExView 22x/264x	Smoked
SVFT-P22C	8704-01	Indoor/Coax	Color/PAL	Pendant	ExView 22x/264x	Smoked
SVFT-W22	8707-00	Outdoor/Coax	Color/NTSC	Pendant	ExView 22x/264x	Clear
SVFT-W22C	8707-01	Outdoor/Coax	Color/PAL	Pendant	ExView 22x/264x	Clear
SVFT-C23	8702-00	Indoor/Coax	Color/NTSC (day/night)	Ceiling	23x/276x	Clear
SVFT-C23C	8702-01	Indoor/Coax	Color/PAL (day/night)	Ceiling	23x/276x	Clear
SVFT-P23	8705-00	Indoor/Coax	Color/NTSC (day/night)	Pendant	23x/276x	Clear
SVFT-P23C	8705-01	Indoor/Coax	Color/PAL (day/night)	Pendant	23x/276x	Clear
SVFT-W23	8708-00	Outdoor/Coax	Color/NTSC (day/night)	Pendant	23x/276x	Clear
SVFT-W23C	8708-01	Outdoor/Coax	Color/PAL (day/night)	Pendant	23x/276x	Clear
SVFT-C22CA	8741-00	Indoor/Coax	Color/NTSC	Ceiling	22x/264x	Smoked
SVFT-C22CA-C	8741-01	Indoor/Coax	Color/PAL	Ceiling	22x/264x	Smoked
SVFT-P22CA	8742-00	Indoor/Coax	Color/NTSC	Pendant	22x/264x	Smoked
SVFT-P22CA-C	8742-01	Indoor/Coax	Color/PAL	Pendant	22x/264x	Smoked
SVFT-W22CA	8743-00	Outdoor/Coax	Color/NTSC	Pendant	22x/264x	Clear
SVFT-W22CA-C	8743-01	Outdoor/Coax	Color/PAL	Pendant	22x/264x	Clear

For the ViconNet (V) option, add -20 to the product code; for Fiber Optic (F) option, add -30 to the product code; for the UTP (T) option, add -40 to the product code.

Table 1: SurveyorVFT Models and Options

Model Number	Product Code	Description
V212-NVT	7631	Receiver, converts UTP video to composite up to 500 ft from transmitter
V213-NVT	6518	Receiver, converts UTP video to composite up to 1000 ft from transmitter
V652R-NVT	7453	Receiver, converts UTP video to composite up to 3000 ft from transmitter (does not support Vicoax systems)
V1613-NVT	7648	16-Channel Hub Receiver, converts UTP video to composite up to 1000 ft from each transmitter
V1662-NVT	6519	16-Channel Hub Receiver, converts UTP video to composite up to 3000 ft from each transmitter (does not support Vicoax systems)

Table 1 (cont'd): UTP Receiver Options

Model Number	Product Code	Description
VF-1400R	8421-00	Receiver, for SurveyorVFT transmission, simplex video and duplex RS-422 data
VF-1400RR	8421-02	Receiver, for SurveyorVFT transmission, simplex video and duplex RS-422 data
VF-SR-20/2	8423-00	Card cage with power supply

Table 1 (cont'd): Fiber Optic Receiver Options

Model Number	Product Code	Description
SVFT-SMK	8377	Ceiling/Pendant, indoor, smoked (gray) tint
SVFT-CHR	8378	Ceiling/Pendant, indoor, chrome
SVFT-GLD	8379	Ceiling/Pendant, indoor, gold

Table 1 (cont'd): SurveyorVFT Lower Domes

Product Specification

Model Number	Product Code	Description
SVFT-UWM	8352	Wall mount, indoor/outdoor
SVFT-UCM	8351	Ceiling mount, indoor/outdoor
SVFT-UPM	8348	Parapet mount, outdoor
SVFT-URM	8349	Roof mount, outdoor
SVFT-UCP	8373	Ceiling panel, indoor
SVFT-WM	8350	Wall mount, short, indoor/outdoor
SVFT-IC-MKT	8374	In-ceiling mount kit, indoor

Table 1 (cont'd): SurveyorVFT Mounting Options

Model Number	Product Code	Description
S28PS-1	7029-10	28 VAC output, 2.15 amps, for indoor SurveyorVFT Camera Domes
S28WPS-1	7030-10	28 VAC output, 3 amps, for outdoor SurveyorVFT Camera Domes
S28PS-HD	7862	Heavy-duty single-channel for SurveyorVFT pressurized and outdoor impact-resistant camera domes
V284-175PS	6421	Four channel, 120 VAC input, 28 VAC output, 6.25 amps (total)
V248-600PS	8438	Eight channel, 120 VAC input, 24 VAC output, 25 amps (total)
V288-300PS	6422	Eight channel, 120 VAC input, 28 VAC output, 12 amps (total)
V2816-600PS	8437	Sixteen channel, 120 VAC input, 28 VAC output, 26 amps (total)

Table 1 (cont'd): SurveyorVFT Power Supplies

Contractors' Specification

TECHNICAL SPECIFICATIONS **SECURITY SYSTEM**
DIVISION 13 - SPECIAL CONSTRUCTION
SECTION 137_ _ - SECURITY CCTV SYSTEM

PART 2 - PRODUCTS

2.01 GENERAL

A. All equipment and materials used shall be standard components, regularly manufactured, regularly utilized in the manufacturer's system.

B. All systems and components shall have been thoroughly tested and proven in actual use.

C. All systems and components shall be provided with the availability of a toll free 24-hour technical support phone number from the manufacturer. The phone number shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge.

D. All systems and components shall be provided with an explicit manufacturer warranty.

2.01 COMPACT CAMERA DOME SYSTEM

A. The motorized dome shall have internal CPU-circuitry and provision for external programming via standard RS-422/485 protocol or enhanced VicoaxII protocol. Options for TCP/IP, fiber optic and twisted pair (UTP) video transmission shall be available. This circuitry shall provide for an external power supply input, four alarm inputs, one relay output and communications wiring.

B. Alarm inputs shall be individually programmable for their functional state (enabled or disabled), reporting state (report on or off), active state (high or low), acknowledge mode (manual, momentary or automatic), automatic acknowledge dwell time control, set and reset action (action when triggered or reset) and displayed title text. The relay output shall be programmable for its power-on state (on or off), output type (momentary or latching) and displayed title text.

C. Programmable titling shall be provided for the camera and every preset position, alarm, relay, and sector. Titles shall be enabled or disabled individually or globally. The overall position of the titles and display frame position shall be programmable. The capability to fade titles after a programmable time shall be provided.

D. There shall be 79 programmable preset positions available, each having a variable preset solve speed of 1 sec (nominal) and accuracy of 0.1°. The dome's 360 degree view shall be programmable for a maximum of 16 sectors. Each sector shall have the capability to be blanked out (no video display). The number and size of sectors shall be programmable and have a custom title.

E. There shall be eight (4 on 22X) tours available with 32 steps per tour. Tour steps shall include preset positions with speed control, relay control, alarm acknowledge, save/recall camera status, repeat tour, call another tour, call an autotour and dwell timing control. There shall be two autotours (22XEX/23X only) available with 256 pan, tilt and zoom functions per autotour. Timing shall be dynamic or as is actually programmed with the joystick and push buttons.

F. Pan and tilt functions shall be externally controlled, continuously variable and programmable to be enabled or disabled manual pan limits shall be programmable. There shall be an autopan feature and it shall be programmable for its functional settings (enabled, disabled speed, limits). Maximum manual pan and tilt speeds shall be programmable. Maximum pan speed shall be 360 degrees/sec (120 dps for 22X) and maximum tilt speed shall be 150 degrees/sec (90 dps for 22X). Pan and tilt speeds shall also be scalable to the zoom setting. The zoom function speed shall be externally controlled using three settings, low, medium and high.

G. There shall be three camera/lens formats available, 22X, 22X with ExView™ technology and 23X (day/night). The camera-lens module shall be a 1/4 inch, high-resolution color type. Camera sensitivity shall be between 0.0019 fc (0.02 lux) to 0.002 fc (0.03 lux), depending on the model for 23X and 22XEX respectively; the 22X shall have a 0.2 fc (2 lux) sensitivity. The lens on the color cameras shall have a maximum optical zoom setting of 22X and a maximum digital zoom setting of 12X for a total zoom setting of 264X and the lens on the day/night cameras shall have a maximum optical zoom setting of 23X and a maximum digital zoom setting of 12X for a total zoom setting of 276. Lens focal length shall be 4-88 mm with a maximum aperture of f/1.6 for the color cameras and 3.6-82.8 mm for the day/night cameras with a maximum aperture of f/1.6. The digital zoom shall be programmable for its functional setting (enable/disable). An autoiris function with a manual override feature and an auto-focus function with functional setting control (enable/disable) shall also be provided. The 23X camera shall feature wide dynamic range to provide the highest quality image with excellent contrast.

H. In addition, the camera shall provide high level, programmable functions. The autoiris and AGC (22XEX/23X only) shall be adjustable. The shutter speed shall be automatic or manual. The automatic shutter speed shall work with an auto exposure feature. This feature can be set to operate with a fully automatic shutter speed or a fixed, selectable, linear speed. These features are called exposure priority or shutter priority. All color cameras shall have white balance gain using red and blue scales. Backlight compensation shall be programmable for its relative setting using a tuning value scale. Video line locking shall be provided with an internal crystal clock or a programmable vertical phase scale.

I. The basic ceiling mounted version shall be designed to mount into any dropped or hard ceiling having the capacity to support the dome's weight. There shall be an optional mounting kit for ceilings not able to support the dome's weight.

J. The indoor pendant version shall be mounted using a molded thermoplastic housing and 1-1/2 inch NPT threaded fitting. The outdoor pendant model shall be mounted using a die cast aluminum housing and 1-1/2 inch NPT threaded fitting and shall include a molded thermoplastic sunshield and additional environmental control.

K. A real time clock and scheduler (22XEX/23X only) shall be available on all models. Up to 64 events shall be able to be scheduled for action at a programmed time of day. Events that may be scheduled include a preset, turning a relay on or off, enabling or disabling an alarm, and calling a tour or an autotour

L. 16 individual zoom-scalable programmable privacy masks shall be available on 22XEX/23X models.

M. Programmable azimuth and compass display shall be available on 22XEX and 23X models. The compass shall be programmed for absolute North and shall display 8 compass headings (N, NE, E, SE, S, SW, W, NW). Pan and tilt degrees shall be displayed with a 1° resolution.

N. Motion detection capability shall be available for the day/night camera. For each preset, there are 6 programmable zones for motion detection. Each zone has 3 sensitivity levels. Programmable actions may be associated with each detection zone, including calling another preset, turning a relay on or off, and calling a tour or an autotour.

O. The capability to freeze an image during a preset solve shall be available on the day/night cameras. The control shall be global and affect all preset solves. The freeze of an image during solve has advantages when recording using a motion compensated recording system (DVR).

P. The capability to flip (invert) the video image shall be available on the day/night cameras. This feature is useful when mounting units in an inverted position. All pan/tilt and compass displays are automatically adjusted for the inverted image.

Q. Auto Baud detection shall be provided on all models operating in RS-422/RS-485 communication mode. Baud rates supported shall be 4800, 9600 and 19,200 bps. All units shall have automatic detection and correction of the receive polarity (commands into the dome). The polarity of the transmit signals (responses from the dome) shall be programmable.

R. Absolute position control shall be provided on all models operating in RS-422/RS-485 communication mode. Pan and tilt direct control resolution shall be to 0.125 degrees and zoom direct control resolution shall be 0.125X magnitude. The capability to adjust the target iris level shall be provided using the absolute position control feature.

S. All models shall support interfacing to selected competitors' control systems without the need for optional internal or external translator modules. Selection of available competitors' protocols shall be provided via DIP switch settings on the unit.

T. NTCIP 1103 compliant models shall be available (National Transportation Communications for ITS Protocol).

U. Multilanguage menu system shall be provided, including English, Spanish, French and Italian.

V. The camera dome system shall have the following mechanical specifications:

1. Dimensions: Indoor Ceiling
   Diameter: 7.1-in. (180 mm).
   Height: 9.7-in. (246 mm).
   Indoor Pendant
   Diameter: 8.0-in. (203 mm).
   Height: 10.0-in. (254 mm).
   Outdoor Pendant
   Diameter: 9.0-in. (228 mm).
   Height: 10.3-in. (262 mm).
   Lower Dome
   Diameter: 5.9-in. (150 mm).
2. Weight: Indoor Ceiling: 5.1 lb (2.3 kg).
   Indoor Pendant: 4.7 lb (2.1 kg).
   Outdoor Pendant: 7.7 lb (3.5 kg).
3. Construction: Plastic, aluminum and steel.
4. Color: White housing, black trim ring, gray (smoked), chrome or gold dome for the indoor version, clear dome for the outdoor version.

W. Environmental parameters shall be: Indoor units: 32 to 132° F (0 to 55° C). Outdoor units:-29 to 165° F (-34 to 74° C) in accordance with NEMA 2.1.5.1 STD 2; -40 to 132° F (-40 to 55° C) continuous rotation.

The camera dome system shall be Vicon Industries SurveyorVFT models. Refer to Table 1.

Technical Information

ELECTRICAL

Drive Type:	Electrical motorized pan and tilt with electronic control.
Camera Types:	Units available in color and day/night (NTSC/PAL) formats and a variety of zoom and feature capabilities.
Input Voltage:	18-32 VAC.
Maximum Power Cable Distance:	See Table 2.
Maximum Current (@24 VAC):	Indoor: Coax, Fiber, UTP: 1.0 A. ViconNet (TCP/IP): 1.4 A. Outdoor: Coax, Fiber, UTP: 1.8 A. ViconNet (TCP/IP): 2.2 A.
Power Consumption (@24 VAC):	Indoor: Coax, Fiber, UTP: 24 W. ViconNet (TCP/IP): 34 W. Outdoor: Coax, Fiber, UTP: 43 W. ViconNet (TCP/IP): 53 W.
Heat Equivalent:	Indoor: Coax, Fiber, UTP: 1.3 btu/min (0.34 kg-cal/min). ViconNet (TCP/IP): 1.9 btu/min (0.49 kg-cal/min). Outdoor: Coax, Fiber, UTP: 2.4 btu/min (0.6 kg-cal/min). ViconNet (TCP/IP): 3.0 btu/min (0.76 kg-cal/min). Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.
Standard Connector Types:	Video Out: See version type. Power: 2-position removable screw terminal block. Control Input/Output: See version type. Relay Output: See version type. Alarm Input: 8-position removable screw terminal block.
Video Output Impedance:	75 ohms.
Fuse:	F1: 2AG, 1.6 A 250 VAC slo-blo. F2: 2AG, 2.5 A 250 VAC slo-blo.
Radio Emission Rating:	FCC Class A.

OPERATIONAL

Video Pan View:	360°.
Video Tilt View:	-2.5° (-2.5° above horizon) to 92.5° (-2.5° past vertical).
Pan Speed:	Variable, 0.1 to 360°/sec (120°/sec in 22X).
Autopan Speed:	Variable, 0.1 to 42°/sec; enable/disable.
Tilt Speed:	Variable, 0.1 to 150°/sec (90°/sec in 22X).
Zoom and Focus Speed:	Less than 1.8 sec from end to end.
Sectoring:	16 max, programmable for size and titling; capability to be blanked out (22XEX and 23X only).
Preset Capabilities:	79 individual programmable preset positions.
Preset Solving Speed:	1 sec nominal.
Preset Accuracy (Pan & Tilt):	0.1° maximum.
Tour Capabilities:	22X: 4 tours available. 22XEX/23X: 8 tours available. 32 programmable events per tour. Events may be preset positions with speed control, alarm acknowledge, dwell time control, relay control, call autotours, tour repeat or another tour, save/recall camera status.
Autotour Capabilities:	22XEX/23X: 2 autotours available with 256 pan, tilt and zoom functions per autotour. Programming is done in real time with joystick and push buttons. Autotours not available on 22X model.
Alarm Capabilities:	4 alarm inputs, individually programmable. Functional state enable/disable. Report state (report on/off). Active state (high/low). Mode (manual, momentary or automatic) with programmable dwell time control. Set and reset action (preset solve, relay on/off, tour, autotour). Alarm titling.
Relay Output Capabilities:	1 relay output. Power-on state definition (on/off). Output type definition (momentary or latching). Relay function status titling. Resistive Load: 0.3A @125 VAC; 1.5A @30 VDC. Inductive Load: 0.15A @ 125 VAC; 0.75A @ 30 VDC.
Control Display:	On-screen, menu-driven system allowing full configuration of the dome.
Privacy Masks:	22XEX and 23X: 16 individual, programmable, zoom-scalable.

Technical Information

Screen Titling Capabilities: Programmable for camera, preset, sector, relay and alarms.
Camera: 1 for each.
Preset: 79 maximum.
Sector: 16 maximum (22XEX/23X only).
Alarm: 4 maximum.
Individual type date and time enable/disable; 20 characters maximum.
Selectable position.
Three text sizes for top 2 lines.
Fade capability.
Compass/azimuth, 8 compass headings (N, NE, E, SE, S, SW, W, NW). Not available on 22X.

Scheduling: Real time clock allows scheduling of up to 64 events, including presets, relays, alarms, tours or autotours (not on 22X).

Multilanguage Menu: English, Spanish, French and Italian.

Day/Night (23X) Features: 6 programmable motion detection zones with 3 sensitivity levels; image freeze during preset solve; flip (invert) video image.

Auto Baud: Auto baud detection in RS-422/ RS-485 mode; 4800, 9600, 19,200 bps baud rates supported.

Absolute Position Control: Available in RS-422/RS-485 mode.
Pan/tilt: 0.125°; zoom: 0.125X.

Competitive Protocols: DIP switch selectable.

Control Protocol Hardware: Vicon: Vicon's NOVA V1422 Matrix Switcher, V1300, V1344, V1466, V1400 and 1500 series NOVA CPUs, V1400X-DVC System Console and V1300X-RVC desk-top keypad or V1300X-RVC rack-mounted keypad; NTCIP 1103 compatible hardware.

COAXIAL/UTP VERSIONS

Control Protocol Software: Vicon's ProTech software (or compatible) or Surveyor Direct Control program runs on a standard PC type computer with an RS-422/485 half duplex protocol interface.

Control Protocol Format: Vicon: RS-422 or RS-485 protocol. Communication is simplex or half duplex operation at 4800, 9600 or 19,200 baud or Vicon's enhanced VicoaxII protocol (superimposed data on composite video signal) automatically detected upon power up. RS-485 protocol utilizes full tri-state outputs for daisy chain capability.
Pelco: Pelco D Protocol (3/2/99); RS-485 N.8.1, simplex 2400 bps, duplex 4800 bps.
Sensormatic/AD: RS-422/RS-485 communication protocols user's guide Rev. A (csd 05/00); RS-422/RS-485 duplex N.8.1 4800 bps. May require RS-422 converter, RCSN422.
Ultrak: (Released in future.) KD6, KD6-Z control protocols; RS-485 simplex E.8.1, 9600 bps.
Philips: (Released in future.) Receiver/Driver/Auto Dome control code protocol; RS-232 simplex N.8.1, 2400 or 9600 bps.
Kalatel: Non-repeating transmit commands; RS-422 simplex N.8.1, 9600 bps.
Cohu: (Released in future.) MPC System RS-422 interface; RS-422 duplex N.8.1, 9600 bps.
Panasonic: (Released in future.) Panasonic conventional and new camera protocol.
NTCIP: 1103 protocol compatible.
Note: All companies make changes and improvements in their products. Because this product can interface with equipment not manufactured by Vicon, there is a possibility that the interface protocols may have changed since Vicon tested this product with the interfacing equipment. Vicon recommends purchasing a single unit for bench testing prior to purchasing and installing this product in quantity.

Connector Types: **Video Out:**
Coax: BNC-F.
UTP: 3-position removable screw terminal block.
Control Input/Output:
8-position removable screw terminal block.
Relay Output: 8-position removable screw terminal block.

FIBER-OPTIC VERSION

Receiver Specs: **Video:**
I/O Level: 1 V p-p.
I/O Impedance: 75 ohms.
Bandwidth: 8 MHz.
Differential Gain: 5%.
Differential Phase: 5°.
SNR: 60dB.
Data:
Data Rate: Up to 19.2 Kbps.
Optical:
Wavelength: 850/1300 nm.
Loss Budget (62.5/125u): 12 dB.
Connector: ST.

Connector Types: **Video Out:** ST type.
Control Input/Output: ST type.
Relay Output: 8-position removable screw terminal block.

Technical Information

VICONNET VERSION (LAN/TCP/IP)

Communication Protocol Hardware: Vicon's Kollector Elite Digital Recorders and ViconNet Workstations.

LAN Interface: 100 Mbps.

Connector Types: **Video Out:** RJ-45 jack. **Network:** Ethernet 100Base-T RJ-45 jack. 10/100 Mbps required for network connection. **Relay Output:** 3-position removable screw terminal block.

CAMERA/LENS Specifications: Refer to Table 2.

VIDEO TRANSMISSION Maximum Distances: Coax: 1100 ft (350 m), cable dependant.
Vicoax: 1500 ft up to 140° F (60° C); 1000 ft up to 165° F (74° C).
UTP: up to 3000 ft (915 m), model dependant.
Fiber: 1 mile min.; longer distances available dependant on cable quality.
ViconNet: 100 meters without repeater.

MECHANICAL Application: Indoor or outdoor.

Mounting: In-ceiling or indoor/outdoor pendant.
See Table 1 for compatible Vicon mounts.

Housing Types: Indoor pendant housing and outdoor pendant housing with sunshield.

Pendant Mount Size/Thread: Standard 1-1/2 inch male NPT pipe thread or metric equivalent.

Lower Dome Types: Units available for indoor or outdoor in a variety of colors. See Table 1.

Dimensions: See Figure 1.
Indoor Ceiling
Diameter (D1): 7.1 in. (180 mm).
Height (H): 9.7 in. (246 mm).
Indoor Pendant
Diameter (D1): 8.0 in. (203 mm).
Height (H): 10.0 in. (254 mm).
Outdoor Pendant
Diameter (D1): 9.0 in. (228 mm).
Height (H): 10.3 in. (262 mm).
Lower Dome
Diameter (D2): 5.9 in. (150 mm

Weight: Indoor Ceiling: 5.1 lb (2.3 kg).
Indoor Pendant: 4.7 lb (2.1 kg).
Outdoor Pendant: 7.7 lb (3.5 kg).

Construction: In-ceiling: black anodized aluminum.
Indoor pendant: molded plastic.
Outdoor pendant: die-cast aluminum with molded plastic sunshield.

Color: Off-white housing and sunshield.

Shipping Dimensions: Height: 11.6 in. (294 mm).
Width: 16.1 in. (409 mm).
Depth: 19.9 in. (505 mm).

Shipping Weight: In-Ceiling: 8.9 lb (4.0 kg).
Indoor Pendant: 8.5 lb (3.9 kg).
Outdoor Pendant: 11.3 lb (5.1 kg).

Shipping Volume: 2.2 ft^3 (0.06 m^3).

ENVIRONMENTAL Operating Temperature Range: Indoor units: 32 to 132° F (0 to 55° C).
Outdoor units:-29 to 165° F (-34 to 74° C) in accordance with NEMA 2.1.5.1 STD 2;
-40 to 132° F (-40 to 55° C) continuous rotation.

Operating Humidity Range: Indoor: 0 to 90% relative, noncondensing.
Outdoor: 100% relative, noncondensing.

Storage Temperature Range: -40 to 150° F (-40 to 65° C).

Storage Humidity Range: 0 to 90% relative, non-condensing.

IP Rating: Outdoor unit IP66.
Indoor Pendant: IP52.
In-Ceiling: IP51.

Rain/Wind: Outdoor: heavy rain up to 4 in./hr at winds up to 90 mph, when mounted on standard Vicon wall mount.

Wire Size (AWG) Annealed Copper Wire	Distance ft (m)							
	Indoor				Outdoor			
	24 VAC		28 VAC		24 VAC		28 VAC	
	Coax, Fiber, UTP	ViconNet	Coax, Fiber, UTP	ViconNet	Coax, Fiber, UTP	ViconNet	Coax, Fiber, UTP	ViconNet
20	300 (91)	215 (66)	500 (152)	350 (107)	165 (65)	135 (41)	280 (85)	225 (69)
18	469 (143)	336 (102)	781 (238)	547 (167)	258 (102)	211 (64)	438 (134)	352 (107)
16	750 (229)	538 (164)	1250 (381)	875 (267)	413 (126)	330 (101)	700 (213)	563 (172)
14	1200 (366)	860 (262)	2000 (610)	1400 (427)	660 (262)	540 (165)	1120 (341)	900 (274)
12	1875 (572)	1344 (410)	3125 (953)	2188 (667)	1031 (314)	844 (257)	1750 (533)	1406 (429)

Table 2: Maximum Power Cable Distance

Technical Information

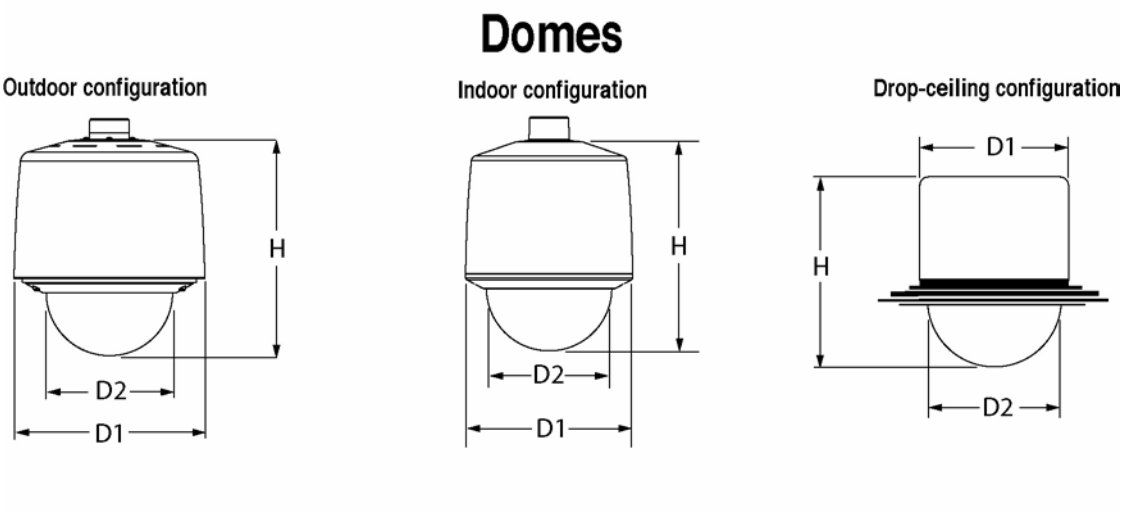


Figure 1
Dimension Drawings

Technical Information

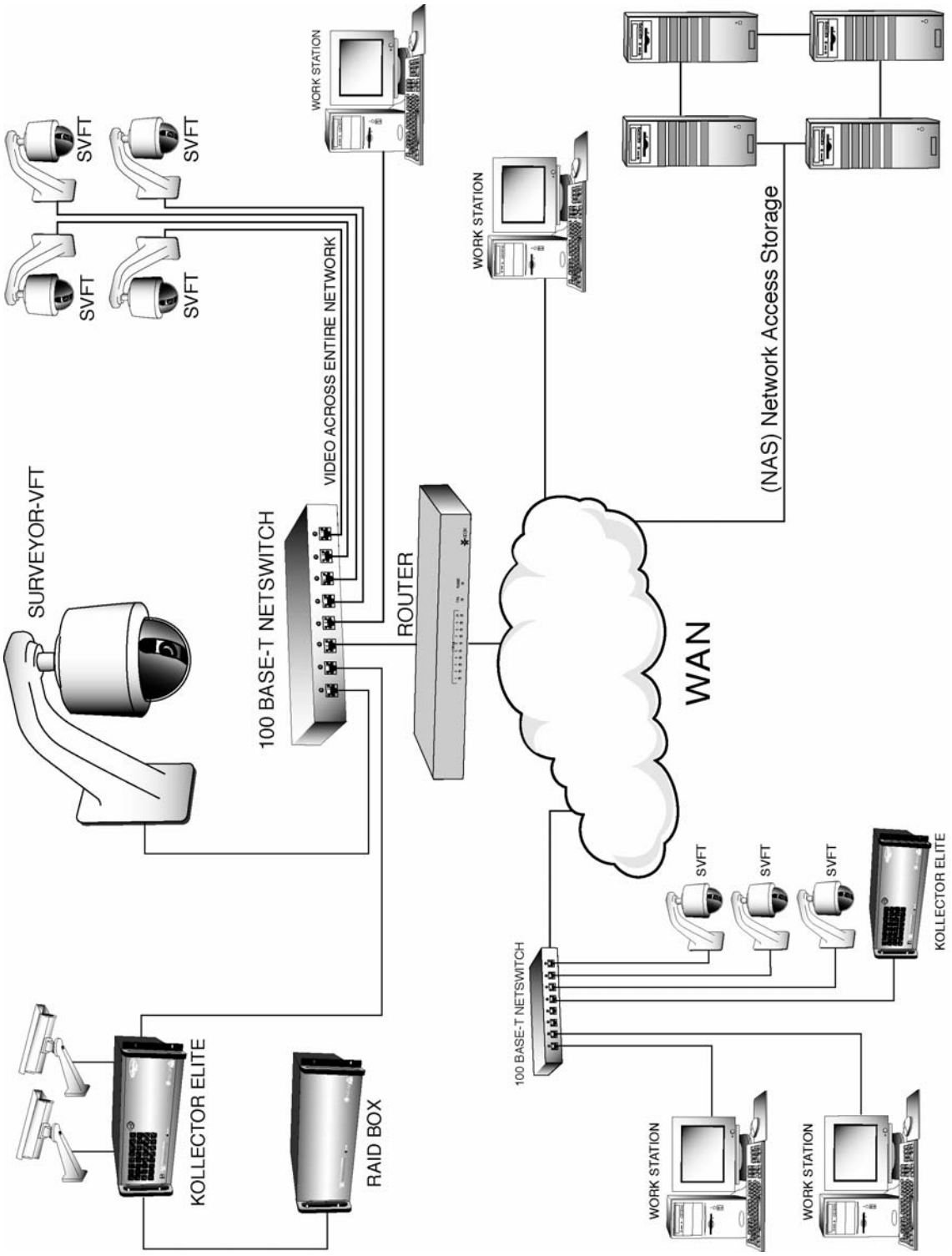
Specifications	Model Numbers			
	SVFT-C22, SVFT-P22, SVFT-W22	SVFT-C22C, SVFT-P22C, SVFT-W22C	SVFT-C23, SVFT-P23, SVFT-W23	SVFT-C23C, SVFT-P23C, SVFT-W23C
	Product Codes			
	8701-00, 8704-00, 8707-00	8701-01, 8704-01, 8707-01	8702-00, 8705-00, 8708-00	8702-01, 8705-01, 8708-01
	Formats			
	NTSC	**PAL**	**NTSC**	**PAL**
Type	Color	Color	Color	Color
Optical Zoom	ExView 22X	ExView 22X	23X	23X
Digital Zoom	12X	12X	12X	12X
Total Zoom	264X	264X	276X	276X
Zoom Speed	Tele-Wide: 3.9 sec	Tele-Wide: 3.9 sec	Tele-Wide: 3.9 sec	Tele-Wide: 3.9 sec
Image Device	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD
Picture Elements	768(H) x 494 (V), 380,000 pixels	752(H) x 582 (V), 438,000 pixels	768(H) x 494 (V), 380,000 pixels	847(H) x 532 (V), 490,000 pixels
Scanning System	2:1 interlace, 525 lines 60 fields/sec	2:1 interlace, 625 lines 50 fields/sec	2:1 interlace, 525 lines 60 fields/sec	2:1 interlace, 625 lines 50 fields/sec
Sensitivity	0.002 fc (0.03 lux) at 40 IRE, f/1.6, auto 1/4s	0.002 fc (0.03 lux) at 40 IRE, f/1.6, auto 1/3s	0.0019 fc (0.02 lux) at 40 IRE, f/1.6, auto 1/4s	0.0019 fc (0.02 lux) at 40 IRE, f/1.6, auto 1/5s
Horizontal Resolution	470 TV lines (color)	470 TV lines (color)	470 TV lines (color)	530 TV lines (color)
S/N Ratio	More than 50 dB	More than 50 dB	More than 50 dB	More than 50 dB
Synchronization	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)
Automatic Gain Control (AGC)	Adjustable to 25 dB	Adjustable to 32 dB	Adjustable to 30 dB	Adjustable to 30 dB
Backlight Compensation	Software adjustable background video level	Software adjustable background video level	Software adjustable background video level	Software adjustable background video level
Iris Control	Automatic/Manual	Automatic/Manual	Automatic/Manual	Automatic/Manual
Wide Dynamic Range	NA	NA	OFF/ON (Auto or Manual)	OFF/ON (Auto or Manual)
Video Focus	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)
White Balance	Automatic/Manual Red/Blue Gain Level	Automatic/Manual Red/Blue Gain Level	Automatic/Manual Red/Blue Gain Level	Automatic/Manual Red/Blue Gain Level
Shutter Speed	Auto (DSS): 1/2-1/4000 Man:1/2-1/30K sec	Auto (DSS): 1/1.5-1/4000 Man:1/1.5-1/30K sec	Auto (DSS): 1/2-1/60 Man:1/2-1/30K sec	Auto (DSS): 1/1.5-1/50 Man:1/1.5-1/30K sec
Input Voltage	9.0 VDC ±0.5 V	9.0 VDC ±0.5 V	9.0 VDC ±0.5 V	9.0 VDC ±0.5 V
Power Consumption	3.3 W max	3.3 W max	3.6 W nom.	3.6 W nom.
Dimensions H x W x D	2.4 x 2.0 x 3.5 in. 60 x 50 x 88.9 mm	2.4 x 2.0 x 3.5 in. 60 x 50 x 88.9 mm	2.4 x 2.0 x 3.5 in. 60 x 50 x 88.9 mm	2.4 x 2.0 x 3.5 in. 60 x 50 x 88.9 mm
Weight	0.5 lb (0.23 kg)	0.5 lb (0.23 kg)	0.5 lb (0.23 kg)	0.5 lb (0.23 kg)
Lenses				
Focal Length	4 - 88 mm	4 - 88 mm	3.6 - 82.8 mm	3.6 - 82.8 mm
Aperture max	f/1.6	f/1.6	f/1.6	f/1.6
Horizontal Angle of View	47° wide, 2.2° tele	47° wide, 2.2° tele	47° wide, 2.2° tele	47° wide, 2.2° tele

Table 3: Camera/Lens Specifications

Specifications	Model Numbers	
	SVFT-C22CA, SVFT-P22CA, SVFT-W22CA	SVFT-C22CA-C, SVFT-P22CA-C, SVFT-W22CA-C
	Product Codes	
	8741-00, 8742-00, 8743-00	8741-01, 8742-01, 8743-01
	Formats	
	NTSC	**PAL**
Type	Color	Color
Optical Zoom	22X	22X
Digital Zoom	12X	12X
Total Zoom	264X	264X
Zoom Speed	OPTICAL wide/DIGITAL tele: 3.9 sec	OPTICAL wide/DIGITAL tele: 3.9 sec
Image Device	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD
Picture Elements	768(H) x 494 (V), 380,000 pixels	752(H) x 582 (V), 438,000 pixels
Scanning System	2:1 interlace, 525 lines 60 fields/sec	2:1 interlace, 625 lines 50 fields/sec
Sensitivity	0.2 fc (2 lux) at 40 IRE, f/1.6	0.2 fc (2 lux) at 40 IRE, f/1.6
Horizontal Resolution	470 TV lines	460 TV lines
S/N Ratio	More than 50 dB	More than 50 dB
Synchronization	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)
Backlight Compensation	ON/OFF	ON/OFF
Iris Control	Automatic/Manual	Automatic/Manual
Video Focus	Automatic/Manual	Automatic/Manual
White Balance	Automatic/Manual; Red/Blue Gain Level	Automatic/Manual; Red/Blue Gain Level
Shutter Speed	1/60 - 1/4000 sec	1/50 - 1/4000 sec
Input Voltage	9.0 –12 VDC	9.0 –12 VDC
Power Consumption	4.0 W max	4.0 W max
Dimensions H x W x L	2.4 x 2.0 x 3.5 in. (60 x 50 x 89.5 mm)	2.4 x 2.0 x 3.5 in. (60 x 50 x 89.5 mm)
Weight	0.5 lb (0.22 kg)	0.5 lb (0.22 kg)
Lenses		
Focal Length	4 - 88 mm	4 - 88 mm
Aperture max	f/1.6	f/1.6
Horizontal Angle of View	47.3° wide, 2.2° tele	47.3° wide, 2.2° tele

Table 3 (cont'd): Camera/Lens Specifications

Technical Information



VICON INDUSTRIES
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FAX: 631-951-2288
TOLL FREE: 800-645-9116

Western Signal Inc.

Specialists In Traffic Control Products Since 1985

July 6, 2006

State of Utah
Division of Purchasing
3150 State Office Building, Capitol Hill
PO Box 141061
Salt Lake City, Utah 84114-1061

RE: UDOT Invitation to Bid #TO7900:

- **STATEWIDE CONTRACT FOR HIGHWAYCCTV SURVEILLANCE SYSTEMS**

Please accept our Bid to the State of Utah for a ITS/CCTV Surveillance System. The system we are proposing to the State is the most current generation CCTV camera from **Vicon** Industries, the **SurveyorVFT** dome camera. The **SurveyorVFT** includes a continuous 360 degree rotation variable-speed drive with a speed of up to 360 degrees per second, 23x high-resolution optical zoom low light color camera, digital zoom providing up to 276x total zoom, video tilt is -2.5 degrees to 92.5 degrees, and is gear driven (**not belt driven**).

Western Signal has supplied and installed over 30 of the Vicon Surveyor systems in the Utah Cities of Provo and Orem. **Western Signal** actively participated in the installations.

This Document addresses the key issues raised in the Bid Specifications. We have documented that our system meets and exceeds the specifications and requirements. In addition, our complete specification for the **SurveyorVFT System** is included in this proposal.

Please find the attached pricing information for the entire Vicon Catalog. Western Signal will supply a hard or paper copy of the Vicon catalog upon request. We also included pricing for associated items including Digital Video Encoders and Cameral Lowering Systems. We are offering a 30% discount off the pricing we attached.

Please find our response to the State of Utah's Invitation to Bid on the following State's Bid forms:

Sincerely;

Steve O'Connor, P.E.

A. Exceptions:

Below we have listed exceptions to Manufacturer Specific requirements in the Specifications:

1. We do not offer an MPEG2 Encoder in our dome. Please see attached information below regarding this subject.
2. MS-Connector is only supplied on our pressurized dome.

B. NTCIP PROTOCOL INFORMATION:

1. Vicon’s camera systems are fully NTCIP Compliant. The systems can utilize Vicon’s proprietary control protocol or communicate to NTCIP standard control commands. Vicon's NTCIP software can be used with any Surveyor2000 dome camera and requires no hardware modifications. A simple software upgrade is provided to "flash" the new program to the dome camera.
2. Vicon will supply detailed NTCIP protocol information and compliance information upon request.

C. Qualifications of Manufacturer:

1. Representative Projects and References:

City of Provo, Utah, U.S.A.

The City of Provo utilizes Vicon's Surveyor Dome cameras to provide video surveillance to the Cities new TOC.

The City of Provo currently has over 20 Vicon cameras installed and will have an install base of 40 Vicon Surveyor dome CCTV Camera's Deployed at multiple locations throughout the City by the end of summer 2006. Provo also utilizes a Vicon Kollector Series Multichannel networked Digital Video Recorder (DVR).
Contact:

Dave Graves, P.E.
(801) 852-6745
Casey Serr, P.E.
(801) 852-6742

City of Orem, Utah, U.S.A.

The City of Orem utilizes Vicon's Surveyor Dome cameras to provide video surveillance to the Cities new TOC.

The City of Orem currently has 9 cameras installed and will have an install base of 15 Vicon Surveyor dome CCTV Camera's Deployed at multiple locations throughout the City by the end of 2006.
Contact:

Keith Larsen, P.E.
(801) 229-7518
Adam Lough, P.E.
(801) 229-7502

Downtown Chicago, Illinois, U.S.A.

The incident management facility of the City of Chicago responds effectively to adverse traffic conditions in the downtown core. The City of Chicago relies on Vicon's Surveyor Dome cameras throughout this highly populated area.

Contact:
City of Chicago
Jim Barry/Bob Nelson
4202 Royal Fox Drive
St. Charles, IL 60174
630-513-8000

Scottsdale, Arizona, U.S.A.

The City of Scottsdale relies on Vicon's Surveyor Dome cameras throughout the City.

Contact:
Bruce Dressel
Transportation Systems Department
7447 E. Indian School Rd.
Scottsdale, AZ 85251
United States
480-312-2358

D. Information on in Camera Encoder:

Should Encoders Be Integrated Into Dome Cameras for ITS Applications? A white paper presented by: Blackhawk Enterprises Inc. 12/11/2003

Background

1. There has been a major shift in the communications philosophy of ITS systems design in the past few years. The introduction of lower priced, multicast video encoders, utilizing standards based compression techniques, has sparked a revolution in what have been traditionally point-to-point and analog multiplexed systems. Even SONET and ATM systems are being replaced with IP systems, as newer technology has introduced the desired redundancy of these systems. Hardened Ethernet switches with fiber optic interfaces, and the advent of Gigabit Ethernet backbones, have furthered this reality. The vast majority of new ITS system designs have incorporated, in some manner, Video over IP (Ethernet).
2. Ethernet has been around for a long time, and there are multitudes of personnel well-versed in its deployment and use, including operation and maintenance. The days of proprietary protocols and specialized equipment setup, requiring custom training, have been replaced with much simpler plug-and-play concepts of standardized Ethernet devices. Cameras and PTZ (pan-tilt-zoom) receivers now communicate via Ethernet, and are viewable and accessible by virtually anyone on a given network (subject to network access controls and priorities), and no longer saturate the network with unicast video streams.
3. The ITS industry has appeared to standardize on MPEG2 (Elementary and/or Transport Streams) as the de facto standard, although there are systems deployed using MJPEG, H.263, and proprietary protocols, and there appears to be a promising future in MPEG4. The field encoders used within this environment are typically external to the camera, and are hardened to meet the extreme conditions of roadside environments.
4. Other industries, such as security, gaming and casinos, are also adopting the Video over IP topology. These environments typically provide much less extreme physical circumstances (typically indoors), are usually more proximal (equipment is located within a more confined overall area), and lend themselves much more to encoders built into the cameras.
5. With the advertising blitz common today, many ITS and IT personnel are drawn to the attractiveness of encoders built into the camera. These cameras are typically referred to as web-cams, IP cameras, or such. They appear in every security related trade

journal and are found at virtually every local computer and camera store, gaining high visibility. These are not true digital cameras, but are the same analog camera with an encoder chip built into the unit. The question is: do these devices really fit the ITS market?

Viewpoint

6. While IP or web-based cameras (from this point forward referred to as IP cameras) have their place in different industries, they do not truly fit into the ITS system design. They may work in some applications, but there are limitations that need to be understood before deciding on such a deployment. Most CCTV manufacturers will implement standards based encoders into their camera offerings, but this will be primarily to target non-ITS markets and to meet the never-ending specifications game (whether or not a feature is needed - if it is specified somewhere, it must be offered).
7. Field Locations The most attractive feature of web-cams/IP cams is that they are an all-in-one package. There is simplicity of not having a separate camera, encoder, multiple power supplies and more cabling. No local cabinet is required. However, this simplicity does not necessarily fit the ITS model.
8. Cat5e/Cat6 A standard dome camera has power (24VAC – 2 wires), RS-422/RS-485 data communications (2 twisted pairs) and video coaxial cable connections. An IP camera has power (24VAC - 2 wires) and Ethernet connection (Cat5E or Cat6). One may think that this reduction in cabling is a benefit, but it most likely is not.
9. Cat5e/Cat6 cabling has a maximum distance of 300ft. It is not uncommon for the local ITS CCTV control cabinet to be located in excess of this distance. RS-422 has a maximum distance of 2000ft. and RS-485 has a maximum distance of 4000ft. Coaxial cable has varying distances, with the most commonly used RG59 rated to 800ft, and RG-6 rated to 2000ft. Use of standard transmission means for data and video allows flexibility in design consideration for local cabinet location, without encountering distance limitations faced by Ethernet.
10. Additionally, coaxial cable and two twisted pair shielded cabling is relatively inexpensive, as compared to Cat5e and especially Cat6 cabling.
11. Field Hardware Most CCTV field locations have a local CCTV cabinet at the base of the pole or within 3000ft. of the pole. In IP systems, hardened Ethernet switches are deployed to interconnect the various ITS components – cameras, detection devices, 2070's, etc. These switches are typically interconnected to a GigaBit or Ethernet backbone via fiber optic connections, due to the distance (1/4 mile or more) between locations. Since a field cabinet already exists with hardened equipment, there are plenty of existing facilities for additional field equipment (encoders), power supplies,

lightning protection, ease of access to equipment and proximal interconnection to an Ethernet switch.

12. Maintenance Decisions are often made on an initial cost outlay basis, without careful consideration of life-cycle costs, including maintenance costs. If the camera and encoder are one single unit (or integrated), failure of either device requires access to the camera. ITS cameras are typically deployed heights of 40ft. – 70ft., and sometimes even higher. Although the increasing use of camera lowering devices somewhat offsets the detraction of having to access a camera due to an encoder failure, the overall repair/replacement time will be significantly higher in any case for an integrated unit. Integrated units will require entire replacement of the camera assembly or disassembly of the unit to replace the encoder. Additionally, technicians will require more time to troubleshoot problems as they cannot easily replace an encoder to determine if the camera or encoder is at fault.
13. **Transmissions Standards**
    At the current time, most IP cameras utilize MJPEG or H.263 (or some other CODEC),
    but do not adopt the ITS standard of MPEG2 for high resolution, high frame rate video.
    These devices do not readily interface with other equipment that may be used and present
    an interoperability dilemma for an agency.

14. The higher end external encoders support MPEG1 and MPEG2, and auto detect which stream is being transmitted for decoding. It is anticipated that MPEG4 units will follow suit in this manner. It is imperative that equipment deployed today be interoperable with equipment to be deployed in the next few years, regardless of vendor. Most of the high-end encoders are now (or are becoming) interoperable on both hardware and software decoding. Additionally, TMC wall screen manufacturers are adopting the MPEG2 standard and building internal decoders into their processors for displaying MPEG2 streams – a feature not available for most commercially available IP cameras due to their compression schemes.
15. Flexibility Incorporation of the video encoder into the camera assembly limits the end user to cameras made by a specific vendor – the vendor offering the integrated package.
16. Use of external video encoders allows a variety of camera styles and camera manufacturers to be utilized within the same infrastructure. The recent publication of the NTCIP Standard MIB for CCTV now allows centralized control systems to function with any CCTV device that supports the standard. Interoperation between Central software and camera receivers is no longer

vendor proprietary. Additionally, many CCTV manufacturers are integrating selectable protocol conversions for Pan-Tilt-Zoom control directly into their dome cameras.

17. Another recent introduction to ITS systems has been the integration of Homeland Security measures. ITS Systems spanning bridges and causeways have begun utilizing high-resolution, low light cameras for monitoring the bridge structures and access points from a security standpoint. These cameras are often specialized and will require the use of external communication devices.
18. **Obsolescence**: Cameras have not changed much over the past several years. A CCD camera is still a CCD camera. Manufacturers have played specification games with presets, compasses, privacy zones, etc. – but all in all, cameras have not greatly changed (since the advent of the dome style camera). In contrary, compression technologies have changed every two or three years.
19. In general, the camera should outlive the encoder by several years. Encoder technology is ever changing, and a good system design will not preclude upgrading or migrating to the latest technology available. One should not have to replace the camera, or perform major hardware upgrading, to take advantage of new and compatible transmission technologies. In other words, the video image capture and the video transmission should be independent of one another.

Conclusion

While IP cameras are becoming more prevalent in other industries, and are appearing in many advertisements the public views, they do not necessarily fit the needs of a deployed ITS system. Independence of the camera and encoder allows the complete flexibility for upgrading/migrating, cost savings in maintenance and troubleshooting, freedom from proprietary protocols, and prevention from design considerations due to distance and location of equipment.

STATE OF UTAH

SOLICITATION NO. TO7900

CCTV Camera Surveillance System

RESPONSES ARE DUE PRIOR TO:

Jul 5, 2006 2:00:00 PM MDT

RESPONSES MAY BE SUBMITTED ELECTRONICALLY TO:

www.rfpdepot.com

RESPONSES MAY BE MAILED OR DELIVERED TO:

State of Utah
Division of Purchasing
3150 State Office Building, Capitol Hill
Salt Lake City, Utah 84114-1061

Bid TO7900
CCTV Camera Surveillance System

Bid Number	TO7900
Bid Title	CCTV Camera Surveillance System
Bid Start Date	Jun 16, 2006 12:42:19 PM MDT
Bid End Date	Jul 5, 2006 2:00:00 PM MDT
Question & Answer End Date	Jun 28, 2006 7:00:00 AM MDT
Bid Contact	Terri O'Toole Purchasing Agent Division of Purchasing 801-538-3147 TOTOOLE@Utah.gov
Contract Duration	1 year
Contract Renewal	2 annual renewals
Prices Good for	90 days
Bid Comments	The State of Utah requests bids for Highway CCTV Surveillance Systems per specifications. Please submit all questions online through RFP Depot.

Item Response Form

Item	TO7900-1-01 - .
Quantity	1 each

Prices are not requested for this item.

Delivery Location	State of Utah No Location Specified Qty 1

Description
.

State of Utah
Invitation to Bid

Company Name			Federal Tax Identification Number
Ordering Address	City	State	Zip Code
Remittance Address (if different from ordering address)	City	State	Zip Code
Type e Corporation e Partnership e Proprietorship e Government	Company Contact Person		
Telephone Number (include area code)	Fax Number (include area code)	Email Address	
Discount Terms(for bid purposes, bid discounts less than 30 days will not be considered)		Days Required for Delivery After Receipt of Order (see attached for any required minimums)	
Brand/Trade Name		Price Guarantee Period (see attached specifications for any required minimums)	
Minimum Order		Company's Internet Web Address	
The undersigned certifies that the goods or services offered are produced, mined, grown, manufactured, or performed in Utah. Yes e No e . If no, enter where produced, etc.			
Offeror's Authorized Representative's Signature		Date	
Type or Print Name		Position or Title	

INVITATION TO BID - INSTRUCTIONS AND GENERAL PROVISIONS

1. SUBMITTING THE BID: (a) The Utah Division of Purchasing and General Services (DIVISION) prefers that bids be submitted electronically. Electronic bids may be submitted through a secure mailbox at RFP Depot, LLC (www.rfpdepot.com) until the date and time as indicated in this document. It is the sole responsibility of the supplier to ensure their bid reaches RFP Depot, LLC before the closing date and time. There is no cost to the supplier to submit Utah's electronic bids via RFP Depot, LLC. (b) If the supplier chooses to submit the bid directly to the DIVISION in writing: The bid must be signed in ink, sealed in a properly addressed envelope, and delivered to the Division of Purchasing, 3150 State Office Building, Capitol Hill, Salt Lake City, UT 84114-1061 by the "Due Date and Time**."** The "Bid Number" and "Due Date" must appear on the outside of the envelope. All prices and notations must be in ink or typewritten. Each item must be priced separately. Unit price shall be shown and a total price shall be entered for each item bid. Errors may be crossed out and corrections printed in ink or typewritten adjacent and must be initialed in ink by person signing bid. Unit price will govern, if there is an error in the extension. Written bids will be considered only if it is submitted on the forms provided by the DIVISION. (c) Bids, modifications, or corrections received after the closing time on the "Due Date" will be considered late and handled in accordance with the Utah Procurement Rules, section R33-3-109. (d) Facsimile transmission of bids to DIVISION will not be considered.

2. BID PREPARATION: (a) Delivery time is critical and must be adhered to as specified. (b) Wherever in this document an item is defined by using a trade name of a manufacturer and/or model number, it is intended that the words, "or equivalent" apply. "Or equivalent" means any other brand that is equal in use, quality, economy and performance to the brand listed as determined by the DIVISION. If the supplier lists a trade name and/or catalog number in the bid, the DIVISION will assume the item meets the specifications unless the bid clearly states it is an alternate, and describes specifically how it differs from the item specified. All bids must include complete manufacturer=s descriptive literature if quoting an equivalent product. All products are to be of new, unused condition, unless otherwise requested in this solicitation. (c) By submitting the bid the supplier certifies that all of the information provided is accurate, that they are willing and able to furnish the item(s) specified, and that prices quoted are correct. (d) This bid may not be withdrawn for a period of 60 days from bid due date.

3. FREIGHT COST: (a) Where "Freight Cost" is listed as a separate line item, suppliers are to provide product line item pricing FOB Origin Less Freight. On the line item for "Freight Cost" suppliers are to indicate the total freight cost FOB Destination Freight Prepaid, and complete the "Freight Information" document. The DIVISION will analyze freight charges separately from the item cost and determine how the shipment will be routed (either by the supplier, or by the State's carrier). (b) Where there is not a line item for "Freight Cost", suppliers are to provide line item pricing FOB Destination Freight Prepaid. Unless otherwise indicated on the contract/purchase order, shipping terms will be FOB Destination Freight Prepaid.

4. SOLICITATION AMENDMENTS: All changes to this solicitation will be made through written addendum only. Bidders are cautioned not to consider verbal modifications.

5. PROTECTED INFORMATION: Suppliers are required to mark any specific information contained in their bid which they are claiming as protected and not to be disclosed to the public or used for purposes other than the evaluation of the bid. Each request for non-disclosure must be made by completing the "Confidentiality Claim Form" located at: http://www.purchasing.utah.gov/contractinfo/ConfidentialityClaimForm.doc with a specific justification explaining why the information is to be protected. Pricing and service elements of any bid will not be considered proprietary. All material becomes the property of the DIVISION and may be returned only at the DIVISION's option. Bids submitted may to be reviewed and evaluated by any persons at the discretion of the DIVISION.

6. SAMPLES: Samples of item(s) specified in this bid, when required by DIVISION, must to be furnished free of charge to DIVISION. Any item not destroyed by tests may, upon request made at the time the sample is furnished, be returned at the bidder's expense.

7. AWARD OF CONTRACT: (a) The contract will to be awarded with reasonable promptness, by written notice, to the lowest responsible bidder that meets the specifications. Consideration will to be given to the quality of the product(s) to be supplied, conformity to the specifications, the purpose for which required, delivery time required, discount terms and other criteria set forth in this invitation to bid. (b) The bids are opened

publicly. The name of each bidder and the amount of the bid is recorded. Each bid, and the record, is open to public inspection. (c) The DIVISION may accept any item or group of items, or overall low bid. The DIVISION has the right to cancel this invitation to bid at any time prior to the award of contract. (d) The DIVISION can reject any and all bids. And it can waive any informality, or technicality in any bid received, if the DIVISION believes it would serve the best interest of the State. (e) Before, or after, the award of a contract the DIVISION has the right to inspect the bidder's premises and all business records to determine the holder's ability to meet contract requirements. (f) DIVISION does not guarantee to make any purchase under awarded contract(s). Estimated quantities are for bidding purposes only, and not to be interpreted as a guarantee to purchase any amount. (g) Utah has a reciprocal preference law which will to be applied against bidders bidding products or services produced in states which discriminate against Utah products. For details see Section 63-56-404 and 63-56-405, Utah Code Annotated. (h) Bid tabulations and awards are posted www.purchasing.utah.gov/BidProcessing/BidTabulations.asp. (i) Multiple contracts may be awarded if the DIVISION determines it would be in its best interest.

8. DIVISION APPROVAL: Purchase orders placed, or contracts written, with the State of Utah, as a result of this bid, will not to be legally binding without the written approval of the director of the DIVISION.

9. DEBARMENT: The CONTRACTOR certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction (contract) by any governmental department or agency. If the CONTRACTOR cannot certify this statement, attach a written explanation for review by the DIVISION.

10. ENERGY CONSERVATION AND RECYCLED PRODUCTS: The contractor is encouraged to offer Energy Star certified products or products that meet FEMP (Federal Energy Management Program) standards for energy consumption. The State of Utah also encourages contractors to offer products that are produced with recycled materials, where appropriate, unless otherwise requested in this solicitation.

11. GOVERNING LAWS AND REGULATIONS: All State purchases are subject to the Utah Procurement Code, Title 63 Chapter 56 U.C.A. 1953, as amended, and the Procurement Rules as adopted by the Utah State Procurement Policy Board. These are available on the Internet at www.purchasing.utah.gov.

(Revision: 2 February 2006 - ITB Instructions)

Standard Contract Terms and Conditions
State of Utah, State Cooperative Contract

1. AUTHORITY: Provisions of this contract are pursuant to the authority set forth in 63-56, Utah Code Annotated, 1953, as amended, Utah State Procurement Rules (Utah Administrative Code Section R33), and related statutes which permit the STATE to purchase certain specified services, and other approved purchases for the STATE.

2. CONTRACT JURISDICTION, CHOICE OF LAW, AND VENUE: The provisions of this contract shall be governed by the laws of the State of Utah. The parties will submit to the jurisdiction of the courts of the State of Utah for any dispute arising out of this Contract or the breach thereof. Venue shall be in Salt Lake City, in the Third Judicial District Court for Salt Lake Co.

3. LAWS AND REGULATIONS: The Contractor and any and all supplies, services, equipment, and construction proposed and furnished under this contract will comply fully with all applicable Federal and State laws and regulations.

4. RECORDS ADMINISTRATION: The Contractor will maintain, or supervise the maintenance of all records necessary to properly account for the payments made to the Contractor for costs authorized by this contract. These records will be retained by the Contractor for at least four years after the contract terminates, or until all audits initiated within the four years have been completed, whichever is later. The Contractor agrees to allow the State and Federal auditors, and State agency staff, access to all the records to this contract, for audit and inspection, and monitoring of services. Such access will be during normal business hours, or by appointment.

5. CONFLICT OF INTEREST: Contractor certifies that it has not offered or given any gift or compensation prohibited by the laws of the State of Utah to any officer or employee of the STATE or participating political subdivisions to secure favorable treatment with respect to being awarded this contract.

6. INDEPENDENT CONTRACTOR: Contractor will be an independent Contractor, and as such will have no authorization, express or implied to bind the STATE to any agreements, settlements, liability or understanding whatsoever, and agrees not to perform any acts as agent for the STATE, except as expressly set forth herein. Compensation stated herein will be the total amount payable to the Contractor by the STATE. The Contractor will be responsible for the payment of all income tax and social security tax due as a result of payments received from the STATE for these contract services. Persons employed by the STATE and acting under the direction of the STATE will not be deemed to be employees or agents of the Contractor.

7. INDEMNITY CLAUSE: The Contractor will release, protect, indemnify and hold the STATE and the respective political subdivisions and their officers, agencies, employees, harmless from and against any damage, cost or liability, including reasonable attorney's fees for any or all injuries to persons, property or claims for money damages arising from acts or omissions of the Contractor, his employees or subcontractors or volunteers.

8. EMPLOYMENT PRACTICES CLAUSE: The Contractor agrees to abide by the provisions of Title VI and VII of the Civil Rights Act of 1964 (42USC 2000e) which prohibits discrimination against any employee or applicant for employment or any applicant or recipient of services, on the basis of race, religion, color, or national origin; and further agrees to abide by Executive Order No. 11246, as amended, which prohibits discrimination on the basis of sex; 45 CFR 90 which prohibits discrimination on the basis of age; and Section 504 of the Rehabilitation Act of 1973, or the Americans with Disabilities Act of 1990 which prohibits discrimination on the basis of disabilities. Also, the Contractor agrees to abide by Utah's Executive Order, dated March 17, 1993, which prohibits sexual harassment in the work place.

9. SEVERABILITY: If any provision of this contract is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions will not be affected; and the rights and obligations of the parties will be construed and enforced as if the contract did not contain the particular provision held to be invalid.

10. RENEGOTIATION OR MODIFICATIONS: The terms of this contract will not be waived, altered, modified, supplemented or amended in any manner whatsoever without prior written approval of the State Director of Purchasing. Automatic renewals will not apply to this contract.

11. DEBARMENT: The Contractor certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction (contract), by any governmental department or agency. If the Contractor cannot certify this statement, attach a written explanation for review by the STATE. The Contractor must notify the State Director of Purchasing within 30 days if debarred by any governmental entity during the Contract period.

12. TERMINATION: Unless otherwise stated in the Special Terms and Conditions, this contract may be terminated, with cause by either party, in advance of the specified termination date, upon written notice being given by the other party. The party in violation will be given ten (10) working days after notification to correct and cease the violations, after which the contract may be terminated for cause. This contract may be terminated without cause, in advance of the specified expiration date, by either party, upon 90 days prior written notice being given the other party. On termination of this contract, all

accounts and payments will be processed according to the financial arrangements set forth herein for approved services rendered to date of termination.

13. NONAPPROPRIATION OF FUNDS: The Contractor acknowledges that the State cannot contract for the payment of funds not yet appropriated by the Utah State Legislature. If funding to the State is reduced due to an order by the Legislature or the Governor, or is required by State law, or if federal funding (when applicable) is not provided, the State may terminate this contract or proportionately reduce the services and purchase obligations from the State upon 30 days written notice. In the case that funds are not appropriated or are reduced, the State will reimburse Contractor for products delivered or services performed through the date of cancellation or reduction, and the State will not be liable for any future commitments, penalties, or liquidated damages.

14. TAXES: Proposal prices will be exclusive of state sales, use and federal excise taxes. The State of Utah's sales and use tax exemption number is E33399. The tangible personal property or services being purchased are being paid from STATE funds and used in the exercise of that entity's essential functions. If the items being purchased are construction materials, they will be converted into real property by employees of this government entity, unless otherwise stated in the contract, or contract orders. The State of Utah's Federal excise exemption number is 87-780019K.

15. WARRANTY: The Contractor agrees to warrant and assume responsibility for all products (including hardware, firmware, and/or software products) that it licenses, contracts, or sells to the State of Utah under this contract for a period of one year, unless otherwise specified and mutually agreed upon elsewhere in this contract. The Contractor (seller) acknowledges that all warranties granted to the buyer by the Uniform Commercial Code of the State of Utah apply to this contract. Product liability disclaimers and/or warranty disclaimers from the seller are not applicable to this contract unless otherwise specified and mutually agreed upon elsewhere in this contract. In general, the Contractor warrants that: (1) the product will do what the salesperson said it would do, (2) the product will live up to all specific claims that the manufacturer makes in their advertisements, (3) the product will be suitable for the ordinary purposes for which such product is used, (4) the product will be suitable for any special purposes that the STATE has relied on the Contractor's skill or judgment to consider when it advised the STATE about the product, (5) the product has been properly designed and manufactured, and (6) the product is free of significant defects or unusual problems about which the STATE has not been warned. Remedies available to the STATE include the following: The Contractor will repair or replace (at no charge to the STATE) the product whose nonconformance is discovered and made known to the Contractor in writing. If the repaired and/or replaced product proves to be inadequate, or fails of its essential purpose, the Contractor will refund the full amount of any payments that have been made. Nothing in this warranty will be construed to limit any rights or remedies the State of Utah may otherwise have under this contract.

16. PARTICIPANTS: This is a contract to provide the State of Utah government departments, institutions, agencies and political subdivisions (i.e., colleges, school districts, counties, cities, etc.) with the goods and/or services described in the proposal.

17. POLITICAL SUBDIVISION PARTICIPATION: Participation under this contract by political subdivisions (i.e., colleges, school districts, counties, cities, etc.) will be voluntarily determined by the political subdivision. The Contractor agrees to supply the political subdivisions based upon the same terms, conditions and prices.

18. QUANTITY ESTIMATES: The STATE does not guarantee to purchase any amount under the contract to be awarded. Estimated quantities are for proposing purposes only and are not to be construed as a guarantee to purchase any amount.

19. DELIVERY: The prices proposed will be the delivered price to any state agency or political subdivision. Unless otherwise specified by the State, all deliveries will be F.O.B. destination with all transportation and handling charges paid by the Contractor. Responsibility and liability for loss or damage will remain with Contractor until final inspection and acceptance when responsibility will pass to the Buyer except as to latent defects, fraud, and Contractor's warranty obligations. The minimum shipment amount will be found in the special terms and conditions. Any order for less than the specified amount is to be shipped with the freight prepaid and added as a separate item on the invoice. Any portion of an order to be shipped without transportation charges that is back ordered will be shipped without transportation charges.

20. REPORTS: The Contractor will submit quarterly reports to the State Purchasing Agent showing the quantities and dollar volume of purchases by each agency and political subdivision.

21. PROMPT PAYMENT DISCOUNT: Offeror may quote a prompt payment discount based upon early payment; however, discounts offered for less than 30 days will not be considered in making the award. The prompt payment discount will apply to payments made with purchasing cards and checks. The date from which discount time is calculated will be the date a correct invoice is received or receipt of shipment, whichever is later; except that if testing is performed, the date will be the date of acceptance of the merchandise.

22. FIRM PRICES: Unless otherwise stated in the special terms and conditions, for the purpose of award, offers made in accordance with this solicitation must be good and firm for a period of ninety (90) days from the date of proposal opening.

23. PRICE GUARANTEE, ADJUSTMENTS: The contract pricing resulting from this proposal will be guaranteed for the

period specified. Following the guarantee period, any request for price adjustment must be for an equal guarantee period, and must be made at least 30 days prior to the effective date. Requests for price adjustment must include sufficient documentation supporting the request. Any adjustment or amendment to the contract will not be effective unless approved by the State Director of Purchasing. The STATE will be given the immediate benefit of any decrease in the market, or allowable discount.

24. ORDERING AND INVOICING: Orders will be placed by the using agencies directly with the Contractor. All orders will be shipped promptly in accordance with the delivery guarantee. The Contractor will then promptly submit invoices to the ordering agency. The STATE contract number and the agency ordering number will appear on all invoices, freight tickets, and correspondence relating to the contract order. The prices paid by the STATE will be those prices on file with the Division of Purchasing. The STATE has the right to adjust or return any invoice reflecting incorrect pricing.

25. PAYMENT: Payments are normally made within 30 days following the date the order is delivered or the date a correct invoice is received, whichever is later. After 45 days the Contractor may assess overdue account charges up to a maximum rate of one percent per month on the outstanding balance. Payments may be made via a State of Utah (or political subdivision) “Purchasing Card” (major credit card). All payments to the Contractor will be remitted by mail unless paid by Purchasing Card.

26. MODIFICATION OR WITHDRAWAL OF PROPOSALS: Proposals may be modified or withdrawn prior to the time set for the opening of proposals. After the time set for the opening of proposals, no proposals may be modified or withdrawn.

27. PROPOSAL PREPARATION COSTS: The STATE is not liable for any costs incurred by the offeror in proposal preparation.

28. INSPECTIONS: Goods furnished under this contract will be subject to inspection and test by the Buyer at times and places determined by the Buyer. If the Buyer finds goods furnished to be incomplete or not in compliance with proposal specifications, the Buyer may reject the goods and require Contractor to either correct them without charge or deliver them at a reduced price which is equitable under the circumstances. If Contractor is unable or refuses to correct such goods within a time deemed reasonable by the Buyer, the Buyer may cancel the order in whole or in part. Nothing in this paragraph will adversely affect the Buyer's rights including the rights and remedies associated with revocation of acceptance under the Uniform Commercial Code.

29. PATENTS, COPYRIGHTS, ETC.: The Contractor will release, indemnify and hold the Buyer, its officers, agents and employees harmless from liability of any kind or nature, including the Contractor's use of any copyrighted or un-copyrighted composition, secret process, patented or un-patented invention, article or appliance furnished or used in the performance of this contract.

30. ASSIGNMENT/SUBCONTRACT: Contractor will not assign, sell, transfer, subcontract or sublet rights, or delegate responsibilities under this contract, in whole or in part, without the prior written approval of the State Director of Purchasing.

31. DEFAULT AND REMEDIES: Any of the following events will constitute cause for the STATE to declare Contractor in default of the contract: 1. Nonperformance of contractual requirements; 2. A material breach of any term or condition of this contract. The STATE will issue a written notice of default providing a period in which Contractor will have an opportunity to cure. Time allowed for cure will not diminish or eliminate Contractor's liability for liquidated or other damages. If the default remains, after Contractor has been provided the opportunity to cure, the STATE may do one or more of the following: 1. Exercise any remedy provided by law; 2. Terminate this contract and any related contracts or portions thereof; 3. Impose liquidated damages, if liquidated damages are listed in the contract; 4. Suspend Contractor from receiving future proposal solicitations.

32. FORCE MAJEURE: Neither party to this contract will be held responsible for delay or default caused by fire, riot, acts of God and/or war which is beyond that party's reasonable control. The STATE may terminate this contract after determining such delay or default will reasonably prevent successful performance of the contract.

33. HAZARDOUS CHEMICAL INFORMATION: The Contractor will provide one set of the appropriate material safety data sheet(s) and container label(s) upon delivery of a hazardous material to the user agency. All safety data sheets and labels will be in accordance with each participating state's requirements.

34. NON-COLLUSION: By signing the proposal, the offeror certifies that the proposal submitted has been arrived at independently and has been submitted without collusion with, and without any agreement, understanding or planned common course of action with, any other vendor of materials, supplies, equipment or services described in the Solicitation, designed to limit independent proposing or competition.

35. PUBLIC INFORMATION: Except as identified in writing and expressly approved by the State Division of Purchasing, Contractor agrees that the contract and related Sales Orders and Invoices will be public documents, as far as distribution of copies, and Contractor gives the STATE express permission to make copies of the contract, the response to the solicitation, and related Sales Orders and Invoices in accordance with the State of Utah Government Records Access and Management Act. The permission to make copies as noted will take precedence over any statements of confidentiality, proprietary

information, or copyright information.

36. PROCUREMENT ETHICS: The Contractor understands that a person who is interested in any way in the sale of any supplies, services, construction, or insurance to the State of Utah is violating the law if the person gives or offers to give any compensation, gratuity, contribution, loan or reward, or any promise thereof to any person acting as a procurement officer on behalf of the State, or who in any official capacity participates in the procurement of such supplies, services, construction, or insurance, whether it is given for their own use or for the use or benefit of any other person or organization (63-56-1002, Utah Code Annotated, 1953, as amended).

37. ENERGY CONSERVATION AND RECYCLED PRODUCTS: The contractor is encouraged to offer Energy Star certified products or products that meet FEMP (Federal Energy Management Program) standards for energy consumption. The State of Utah also encourages contractors to offer products that are produced with recycled materials, where appropriate, unless otherwise requested in this solicitation.

38. CONFLICT OF TERMS: Contractor Terms and Conditions that apply must be in writing and attached to the contract. No other Terms and Conditions will apply to this contract including terms listed or referenced on a Contractor's website, terms listed in a Contractor quotation/sales order, etc. In the event of any conflict in the contract terms and conditions, the order of precedence shall be: 1. Attachment A: State of Utah Standard Contract Terms and Conditions; 2. State of Utah Contract Signature Page(s); 3. Additional State Terms and Conditions; 4. Contractor Terms and Conditions.

39. LOCAL WAREHOUSE AND DISTRIBUTION: The Contractor will maintain a reasonable amount of stock warehoused in the State of Utah for immediate or emergency shipments. Shipments are to be made in the quantities as required by the various ordering agencies. Orders for less than the minimum specified amount will have transportation charges prepaid by the Contractor and added as a separate item on the invoice. Any portion of an order to be shipped without transportation charges that is back ordered will be shipped without charge.

40. ENTIRE AGREEMENT: This Agreement, including all Attachments, and documents incorporated hereunder, and the related State Solicitation constitutes the entire agreement between the parties with respect to the subject matter, and supersedes any and all other prior and contemporaneous agreements and understandings between the parties, whether oral or written. The terms of this Agreement shall supersede any additional or conflicting terms or provisions that may be set forth or printed on the Contractor's work plans, cost estimate forms, receiving tickets, invoices, or any other related standard forms or documents of the Contractor that may subsequently be used to implement, record, or invoice services hereunder from time to time, even if such standard forms or documents have been signed or initialed by a representative of the State. The parties agree that the terms of this Agreement shall prevail in any dispute between the terms of this Agreement and the terms printed on any such standard forms or documents, and such standard forms or documents shall not be considered written amendments of this Agreement.

Revision date: 2 Feb 2006

STATEWIDE CONTRACT
HIGHWAY CCTV SURVEILLANCE SYSTEMS
BID SPECIFICATIONS
SOLICITATION #TO7900

INTRODUCTION:
The State of Utah, Division of Purchasing & General Services is requesting bids for ITS/CCTV Camera Surveillance Systems, related components, subcomponents, and parts. All specifications and instructions are in addition to the Standard Terms and Conditions (Attachment).

PURPOSE:
The purpose of this Invitation to Bid is to establish a state cooperative contract for the use of all State of Utah agencies and political subdivisions (entities that derive funding from federal, state and/or local government sources).

CONTRACT TERM:
This bid may result in the award of one state contract for a period of one (1) year with two (2) annual renewal options.

PRICE GUARANTEE/ADJUSTMENTS:
Pricing shall be guaranteed for a minimum period of three (3) months. Requests for price adjustment must include sufficient documentation supporting the request. It is understood and agreed that in the event of a reduction in price, the State of Utah will be given the full benefit of such decrease. Any adjustment or amendment to the contract will not be effective unless approved by the State Director of Purchasing.

REPORTING:
Contract holders are required to furnish the state with quarterly usage reports stating the quantities and dollar volume of purchases by each agency and political subdivision. Please follow the guidelines below when submitting your reports. Failure to comply with these guidelines may result in the suspension or cancellation of your state cooperative contract.

Quarterly Report Submission
All reports submitted are to coincide with the quarters and date ranges as outlined below:

Quarter 1: January 1st through March 31st, due by April 30th
Quarter 2: April 1st through June 30th, due by July 30th
Quarter 3: July 1st through September 30th, due by October 30th
Quarter 4: October 1st through December 31st, due by January 30th

Do not provide reports that contain data from two separate years.

Electronic Report Submission
All reports must be submitted electronically in the format designated in your contract, e.g. standard, line item, or special. You have been provided an electronic Excel-spreadsheet template for your report which includes instructions, sample data, and all other information that must be provided. This format must be followed when submitting reports. The reports must be submitted via e-mail to: salesreports@utah.gov.
If, however, you do not have Microsoft Excel, please e-mail the address above to discuss an alternate format. And for your convenience, in an effort to assist you in supplying the requisite information in the mandated format, the Division of Purchasing has made the templates available to you via its website. To access the templates on the website please follow the following link: http://www.purchasing.utah.gov/reporting/instructions.pdf

HISTORICAL INFORMATION:
Historical sales data for the previous 12 month period is as follows: State Agencies $71,132. If interested in the pricing from the previous contract, you may view the contract at www.purchasing.state.ut.us.

PRODUCT REQUIREMENTS:
The ITS/CCTV Camera Surveillance system shall consist of the following:

CCTV Dome Camera System
CCTV Position Camera System
Cabling
Training
Installation and Test Equipment
Engineering Services
Related Parts

STATEWIDE CONTRACT
HIGHWAY CCTV SURVEILLANCE SYSTEMS
TECHNICAL REQUIREMENTS
SOLICITATION #TO7900

SPECIFICATIONS

SCOPE

This specification sets the minimum requirements for the purchase of CCTV Camera Surveillance System(s) used by Intelligent Transportation Systems (ITS) for Traffic Operations, Advanced Traffic Management, Advanced Traveler Information, Homeland Security, and broadcast media feeds.

The camera system shall be a color / monochrome video camera to be deployed in a harsh outdoor environment. It shall be adjacent to roadways and freeways for traffic management surveillance. The components shall include an adaptive color camera with zoom lens, environmental housing, environmental pan / tilt positioner, and cabling.

UDOT's camera control communication infrastructure is currently based on Cohu's ER2221B protocol. In the future the communications protocol will be migrated to NTCIP 1205.

The proposed camera systems should communicate using the ER2221B protocol and be capable of future field upgrading to NTCIP. If the ER2221B protocol is not currently available from the vendor, other similar protocols will be considered depending on the effort required to implement it into UDOT's Traffic Operations Center computer systems.

The proposed camera systems should be capable of supporting NTCIP 1205 functions, as described in paragraph 0. Preference will be given to systems that are NTCIP ready and have a transition plan, if bids are equal.

There should be a transition plan which may include changing of camera system firmware, hardware, adding or removing a protocol converter, etc. The transition should be easily implemented in the field in less than two hours at each camera site.

UDOT's video communications is currently based on NTSC (RS-170 color) output from the camera system. In the future the video output will be migrated to MPEG2 over TCP/IP. Preference will be given to camera systems with both NTSC and expansion capability to MPEG2 outputs, if bids are equal.

GENERAL REQUIREMENTS

ENVIRONMENTAL REQUIREMENTS

The enclosure shall be fabricated from corrosion resistant Type 5.52H32 aluminum, equivalent or better. All internal parts shall be corrosion protected.

The camera with positioner assembly shall be provided in either white or gray enamel, UV protected, exterior finish and meet NEMA 4X, IP66 standard.

The total weight of the camera with positioner assembly shall not exceed 20 pounds.

The camera and positioner shall be rated for operational wind loading up to 145 Km/hr (90 mph), and shall withstand a wind velocity of up to 210 Km/hr (130 mph).

The camera, positioners, and the electronics that are installed in the same enclosure shall be rated to operate at the ambient conditions of:

Temperature	Humidity	Elevation
-34 °C to +60 °C (-30 °F to +140 °F)	0% to 100%, & blowing rain, snow, hail, and sleet.	3000 m (10,000 ft)

Components installed in a cabinet shall be rated for:

Temperature	Humidity	Elevation
-34 °C to +74 °C (-30 °F to +165 °F)	0% to 95% non-condensing	1500 m (5,000 ft)
-34 °C to +60 °C (-30 °F to +140 °F)	0% to 95% non-condensing	3000 m (10,000 ft)

The camera, positioner, and all electronics mounted in the same housing shall comply with MIL-E 5400T, paragraph 3.2.24.6 shock requirements (not including the lens).

All environmental enclosures shall comply with MIL-E-5400T, paragraphs 3.2.24.7 through 3.2.24.9 Air Contaminants requirements.

All environmental enclosures shall comply with MIL-E-5400T, paragraph 3.2.24.10 Explosion requirements.

CAMERA AND OPTICS

The Camera shall be specifically designed to operate under low light conditions and shall function satisfactorily over a wide range of dynamic lighting conditions ranging from low light to full sunlight.

The camera shall automatically switch from color in the daytime to monochrome at night. The camera shall have the ability to manually switch between color and monochrome.

The camera sensor shall use color Charged-Coupled Device (CCD) technology, and shall meet or exceed the following requirements:

Image sensor: ¼ inch color image sensor, blemish free, CCD.

Signal Format: NTSC standard (RS-170 color) 2:1 interlace

Active picture elements: 724 Horizontal and 494 Vertical (pixels)

Contrast variation: 5 Percent overall, or less

Sensitivity at 35 IRE with the lens open to f1.6 (or equivalent sensitivity)

3.0 lux @ 1/60 sec. (Color Daytime mode)
0.2 lux @ 1/4 sec. (Color Daytime mode)
0.3 lux @ 1/60 sec. (Mono Nighttime mode)
0.02 lux @ 1/4 sec. (Mono Nighttime mode)

Automatic gain control: 0-28 dB

Signal to noise ratio: Greater than 50 dB

Color balance: Auto tracking color balance and manually adjustable

Electronic shutter: From 1/2 to 1/30,000 second

Digital Zoom: 10X

Motorized Zoom Lens – Each camera shall be provided with a motorized digital zoom lens with automatic iris (including manual over-ride) and neutral density spot filter. All lens motors shall be clutch protected to prevent damage due to overload.

The camera lens should provide the minimum capabilities:

Automatic focus control with manual focus over-ride. The lens shall not auto-focus on debris on the window

Optical Zoom: 23X (in addition to the 10X digital zoom)

Optical Focal length: 3.6mm to 82.8 mm or greater.

Effective digital focal length: 82.8mm to 828mm

Aperture range: f/1.6 (wide) to f/3.6 (telephoto)

Automatic Iris control with manual over-ride.

The video output shall be protected with 75 ohm isolated base band video surge protector capable of surge handling of 18 kA, 110 Joules. The insertion loss shall be less than 0.3 dB over a frequency range of dc to 15 MHz.

The video output shall be synchronized with the 60 Hz power input.

The system shall be fully functional with an input power of 89 VAC to 135 VAC, 57-63 Hz with a power factor better than 0.85.

The combined camera and positioner shall not be in excess of 50 Watts, not excluding the heater sub-system.

The camera shall have a heater and circulation system in the enclosure, as required to melt frost, snow, and ice that might accumulate on the outside of the enclosure's window. The heater shall be thermostatically controlled and should not exceed 60 Watts.

CONTROL MODULE

The control module is an interface for controlling the camera and camera positioner; video processing, and for interfacing with communications.

The control module shall be integrated into the camera.

Each control module (camera) shall have a unique address, which shall be software configurable. The control module shall respond to a command only if it is addressed.

The control module shall receive data from the Traffic Operations Center, decode the command data, perform error checking, and drive the pan/tilt unit, camera controls, and motorized zoom lens. At a minimum, the control module shall provide the following functions:

Detect light level, and adjust the control Color / Monochrome Switching.
Zoom In and Out
Focus Near and Far
Tilt Up and Down
Camera Power On and Off
Manual Iris Open and Close
Pan Right and Left
Preset Position Control
Positioner's Speed Control

The camera shall be capable of accepting a minimum of 2 external alarm inputs.

There shall be capability for field programmable text placed in the video output. Text shall include labels or titles, including display of camera ID, preset ID, azimuth, and alarms. There shall be the capability to manually switch text messages on and off.

The control module shall have provision to blank the video in eight or more configurable privacy zones.

All configuration settings shall be stored be non-volatile. All configuration information shall not be affected by a loss of power.

The control module shall be firmware based. There shall be tools and procedures provided for field upgrading the firmware. These shall be provided with the diagnostics.

The control module shall be configured using a laptop computer communicating through the "com port". The vendor shall supply a "configuration and diagnostic" program adequate to run on a "Windows 95" and better operating system.

COMMUNICATIONS AND PROTOCOL

There shall be an RS-232 and/or RS-422 communications port in the control module. This port shall receive commands to control the camera operations and configure the control module.

All CCTV control functions must be accessible and operational via a Windows based interface using a standard RS-232 serial connection. (See paragraph 0)

The minimum port configuration of asynchronous DTE; data rates of 2400 to 9600 BAUD; even, odd, or no parity; and one stop bit.

The control module shall communicate and function utilizing Cohu's non-proprietary "ER2221B Receiver Communications Protocol". For ER2221B protocol refer to: http://www.cohu-cameras.com/opmans/mpc2221pro.pdf

If the ER2221B protocol is not currently available from the vendor, other similar protocols will be considered depending on the effort required to implement it into UDOT's Traffic Operations Center computer systems. The vendor shall provide the detailed specification of the alternative protocol in electronic format. The vendor shall license the agency to use of the alternate protocol. The agency will have exclusive right to evaluate the alternate protocol and determine the feasibility for use. If feasible, the agency will make the software changes in the agency's computers to implement the alternative protocol.

The control module protocol should be upgradeable to the following NTCIP configuration.

NTCIP 1205 – "Objects for CCTV Camera Control". The NTCIP 1205 protocol implementation shall comply with all mandatory conformance groups and with the "Extended Functions" and "Motion Control" conformance groups.

NTCIP 2301 – SNMP

NTCIP 2101 – PMPP

The Video output should be upgradeable to generic MPEG-2 digital outputs.

CONFIGURATION AND DIAGNOSTIC UTILITIES

The vendor shall provide configuration and diagnostic utilities as described in ¶0.

CAMERA SYSTEM DOCUMENTATION

Each system shall be provided with manual(s) with user's operation, and installation instructions. This shall describe the function and use of all of the configuration parameters.

Each system shall be provided with a maintenance manual, which shall describe the electronic circuit operations, troubleshooting, and have adequate information to maintain the system to the component level. The factory acceptance test shall be included in the manual.

There shall also be a software user's manual with details on interfacing to the system. There shall be descriptions for all of the communication protocol and the meaning of the data included.

CAMERA INTERFACE CABLE

A camera cable shall be provided to interface the camera to a roadside cabinet. The camera cable shall be terminated at the camera end with an outdoor approved, mil grade or equivalent connector.

The wiring under the connector's strain relief shall be potted to hermetically seal the connector from moisture.

The cable shall provide power to the camera, digital communications to the Control Module, and video from the camera. Consideration should be given to future network communications for digital video.

The cable is to be pulled from the camera, down the pole, and through conduit to the roadside cabinet.

The cable shall be compliant with NEC requirements for installation in outdoor conduit.

Camera Interface Cables shall not be included as part of the camera. Each cable shall be supplied as required and ordered for each project.

TESTING, INTEGRATION, AND SUPPORT

A factory test shall be successfully completed for each system. The test procedure shall be prepared by the vendor and be designed to demonstrate that the system operates correctly, and that all functions are in conformance with this document. The procedure should be reproducible at the agency.

Each system shall be installed and field-tested for proper operation for 30 consecutive days. During the testing period, all equipment at the system location shall operate without failure of any type.

If any component malfunctions or fails to provide the capabilities specified herein, the vendor shall replace or repair the defective equipment within 48 hours of notification by the agency. Costs of correcting component malfunctions shall be borne by the vendor.

After the component malfunction has been corrected to the satisfaction of the agency, a new 30-day test period shall be started.

The vendor shall stock the necessary replacement products to maintain the operability of the system for a period of at least 5 years.

The vendor shall provide telephone customer support as required during normal business hours, at no cost during the warranty period.

WARRANTY
The system shall be warranted for a minimum of three (3) years from date of delivery, or for one year from time of installation, whichever is longer.

The period of warranty coverage shall not be less than the manufacturers usual and customary warranty period.

The agency, or the manufacturer’s representative, may make minor warranty repairs with the consent of the manufacturer. The manufacturer will make all other warranty repairs. The vendor will bear all costs including labor, parts, and shipping charges.

Revisions, updates and new releases of the system, furnished software, and firmware shall be provided during the warranty period without additional costs. With the consent of the manufacturer, the agency shall assume responsibility for field installation of updates to systems that have been in use for more than 30 days.

DOME CCTV CAMERA SYSTEM

DESCRIPTION

The CCTV Dome Camera System has a camera, control module and pan/tilt unit combined into a dome enclosure that can be deployed in harsh outdoor environmental conditions.

The dome camera system shall comply with the requirements specified in Section 0.

ENVIRONMENTAL ENCLOSURE

A sunshield shall be provided and mounted in such a fashion to allow air to pass over the external surface of the camera while keeping direct sun off the camera housing.

The enclosure shall be fabricated from corrosion resistant lightweight aluminum, equivalent or better. All parts shall be corrosion protected.

The system shall be designed for use in outdoor applications.

The dome base shall be provided in either white or gray enamel, UV protected exterior finish and meet NEMA 4X, IP66 standard.

The total weight of the camera assembly shall not exceed 20 pounds.

DOME CAMERA POSITIONER (PAN/ TILT UNIT)

Provide the minimum pan / tilt capabilities:

360° continuous pan range
Vertical Tilt range of + 02° to -90°.
Manual Pan speed variable from 0.1°/sec. to 80°/sec.
Manual Tilt speed variable from 0.1°/sec. to 40°/sec
Minimum 64 preset positions with accuracy of +/- 0.1°

The Dome CCTV Camera System should be capable of being mounted on face of wall, pole and pedestal.

The camera assembly shall be pipe mounted to a 1.5 inch NPT pipe.

The cabling to the camera shall be routed through the fitting.

The Dome CCTV Camera System should be capable of being mounted on a camera lowering system.

METHOD OF MEASUREMENT

The Dome CCTV Camera System will be measured as a unit, each which shall include all materials, cabling, documentation, warranty and equipment incidental thereto.

BASIS OF PAYMENT

The camera assembly, measured as provided above, will be paid for at the contract unit price each which

price shall be payment in full for furnishing a color / monochrome camera, zoom lens, integrated receiver/driver, environmental enclosure, pan and tilt unit, mounting hardware, 3-YEAR warranty and for all labor, equipment, transportation, and incidentals necessary to provide these items.

INTEGRATED CCTV CAMERA AND POSITIONER SYSTEM

DESCRIPTION
The Integrated CCTV Camera and Positioner System is an integrated day / night camera, control module, and pan / tilt unit combined into a tube-type enclosure that can be deployed in harsh outdoor environmental conditions. The camera enclosure / positioner shall be an integrated assembly, designed to be installed on top of a vertical steel pole. The camera shall be installed in the camera enclosure.

The Integrated CCTV Camera and Positioner System shall comply with the requirements specified in Section 0.

ENVIRONMENTAL ENCLOSURE
A sunshield shall be provided and mounted in such a fashion to allow air to pass over the external surface of the camera while keeping direct sun off the camera housing. The front portion of the shield shall be adequate to prevent direct sunlight from striking the housing viewing window while not obscuring the field of view.

The enclosure shall be fabricated from corrosion resistant lightweight aluminum, equivalent or better. All internal parts shall be corrosion protected.

The enclosure shall be provided in either white or gray enamel, UV protected, exterior finish and meet NEMA 4X, IP66 standard.

The total weight of the camera assembly shall not exceed 20 pounds.

The housing shall be sealed and pressurized to a minimum of 5 psi with dry nitrogen.

Provide a programmable alphanumeric notification message when the pressure in the camera housing drops to less than two psi to warn of a low-pressure condition. The message should be superimposed on the camera video output

CAMERA POSITIONER (PAN/ TILT UNIT)
The positioner shall be designed for use in outdoor applications.

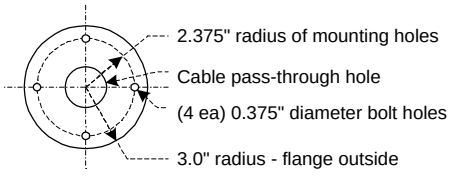
Provide the minimum pan/tilt capabilities:

360° continuous pan range
Vertical Tilt range of + 33° to -83°.
Manual Pan speed variable from 0.1°/sec. to 80°/sec.
Manual Tilt speed variable from 0.5°/sec. to 20°/sec
Minimum 64 preset positions with accuracy of +/- 0.25°

The Integrated CCTV Camera and Positioner System should be capable of being mounted on the face of a vertical wall, pole, and pedestal.

The top of the pole (not supplied in this contract) shall have a flange for mounting the camera positioner. There are 0.3125 inch studs in the camera pole flange. There shall be a complimentary flange on the positioner. See Figure 4.4.4 for positioner flange details.

Figure 4.4.4 Positioner Base



The camera positioner shall be supplied with a weather gasket to be placed between the flanges.

The cabling to the camera shall be routed through the center of the flange.

METHOD OF MEASUREMENT
The CCTV Position Camera System will be measured as a unit, each which shall include all materials, documentation, warranty and equipment incidental thereto.

BASIS OF PAYMENT
The camera assembly, measured as provided above, will be paid for at the contract unit price each which price shall be payment in full for furnishing a color/monochrome camera, zoom lens, integrated receiver/driver, environmental enclosure, pan and tilt unit, mounting hardware, 3-YEAR warranty and for all labor, equipment, transportation, and incidentals necessary to provide these items.

CABLING

DESCRIPTION

Cabling is defined as the necessary cables for carrying video signal, power and control signals.

The System Cabling shall comply with the requirements specified in Section 0.

METHOD OF MEASUREMENT
Cable lengths shall be bid as a fixed cost for the connector(s) and connector termination; plus a “cost per foot” for cable material. Cables will vary in length, depending on the specified project. Typical length of cable is approximately 150 feet.

BASIS OF PAYMENT
The cabling measured as provided above, will be paid for at the contract unit price each which price shall be payment in full for “pre-made” cable, which is to include: project specified cable length, connector termination and for all labor, equipment, transportation, and incidentals necessary to provide these items.

TRAINING

DESCRIPTION
Work under this item shall consist of providing qualified instructors and all materials for training Department personnel and other designated personnel in the operation and maintenance of the various Video Surveillance CCTV System equipment and components furnished under this contract.

TRAINING ELEMENTS
The contractor shall develop and submit training course outlines and samples of all training aids and manuals to the engineer for approval at least forty-five (45) days prior to the proposed schedule start of the training sessions. Written approval of this material shall be required prior to the final scheduling of the training sessions or the final production of the training materials. Training shall not begin until after approval of the submitted training material, and a minimum of 10 working days after acceptance of the operation and maintenance manuals specified under the Item Documentation.

The training sessions described under this item shall include training on the use of the any test equipment that the contractor recommends.

All training sessions shall be conducted at locations within Salt lake County, Utah as designated by the department. Training sessions shall not overlap unless otherwise permitted by the Department.

Training shall consist of formal classroom lectures as well as “Hands – On” training. “Hands – On” training shall consist of working with the actual equipment.

A training session shall consist of 4 hours minimum of classroom time. The attendance of a session shall have no greater than 10 people to maximize individual interaction. Each session shall provide a basic understanding of the equipment and subsystems and their operation and maintenance. These training sessions shall include as appropriate, and as a minimum:

Background on concepts of equipment / subsystems and theory of operation;

Functional description of subsystem CCTV camera components, including, but not limited to, camera assemblies, control receivers, recording monitoring and communications equipment;

Procedures for installing and setting up equipment and components;

Basic trouble-shooting and fault determination procedures, including use of test equipment;

Preventative maintenance procedures and schedules.

METHOD OF MEASUREMENT
Training Session will be measured as a Lump Sum which shall cover all preparation of course materials, travel expenses and the time as well as human resources to provide and run the course at the predetermined location.

BASIS OF PAYMENT
Training, measured as provided above, will be paid for at the contract unit
Price Lump Sum, which price shall be full compensation for furnishing instructor(s) and training materials; for providing training sessions; travel expenses and for all labor, equipment, transportation and incidentals necessary to complete this item of work.

QUALIFICATION OF MANUFACTURER

The vendor shall furnish a list of a minimum of three client/customer contacts, with ten or more camera systems deployed for one year or more, at sites similar to Utah’s environment. Utah’s environment is defined as deserts with temperatures up to 115° F in the summer and temperatures down to twenty-five below (-25° F) in the winter.

ENGINEERING FIELD SERVICES

DESCRIPTION
The supplier shall provide on-site services when requested by the State, including, but not limited to:

System configuration
Fine tuning video surveillance system signals
System integration

Experienced personnel familiar with use of the equipment and software shall provide Field services. Experienced personnel shall include, but not limited to instructors, engineers, and field technicians.

Payment for on-site services will be on an 8-hour “person day” basis.

Time required to travel from out of state to Utah shall not be eligible for payment. Travel time within Utah between sites is included in the person-day.

All direct costs of travel, accommodations, and meals shall be included in the unit bid price per day for on-site services. No separate payments will be made for these travel costs.

On-site services may be required anywhere in the state of Utah. Field services will be scheduled at least two weeks in advance and not to exceed 8 weeks.

No payment will be made for on-site services which are required to trouble-shoot or resolve problems caused by malfunctions or failures of the vendor’s equipment or for work done under warranty.

METHOD OF MEASUREMENT
Engineering field services will be measured as days, which shall be the number of training days as defined herein.

BASIS OF PAYMENT
Engineering field services, measured as provided above, will be paid for at the contract unit price per day, which price shall be full compensation for furnishing field personnel to provide engineering services; and for all labor, equipment, transportation, and incidentals necessary to complete this item of work.

INSTALLATION, SETUP, AND MAINTENANCE EQUIPMENT

TEST EQUIPMENT

The vendor shall provide a list of all test equipment, test cables, and installation tools recommended for installation and maintenance for each type of camera system. This list could include specialized electronic and optical devices, crimping tools, etc.

The vendor shall optionally bid a specialized test equipment and installation tool kit. The vendor shall optionally make available individual tools and components in the above kit.

CONFIGURATION AND DIAGNOSTIC UTILITIES

The vendor shall provide a utility program to configure and test the camera system. The program shall be capable of sending all of the camera control commands, configuring all parameters, and displaying the responses.

The program shall run on a technician's laptop computer, operating under Microsoft's Windows 98 operating system.

The agency shall have an unlimited license to copy and use the "configuration and diagnostic" program to test and maintain the camera systems.

METHOD OF MEASUREMENT

The Installation, Setup and Service Equipment Set will be measured as a separate unit as well as each individual installation and test equipment device. Each unit or individual test equipment device shall be included in the bid price, but will not be included in the determination of the bid award.

BASIS OF PAYMENT

Each Equipment device, measured as provided above, will be paid for at the contract unit price each which price shall be payment in full for furnishing a the listed device, 1-YEAR warranty and for all labor, equipment, transportation, and incidentals necessary to provide these items.

CCTV CAMERA SURVEILLANCE SYSTEM
BID #TO7900
PRICING SHEET

1. DOME CCTV CAMERA SYSTEM (3.0)	**EACH SYSTEM**
2. DOME CAMERA CABLE ASSEMBLY (5.0)	**PER CABLE**
PLUS	
	PER FOOT
3. INTEGRATED CCTV CAMERA AND POSITIONER SYSTEM (4.0)	**EACH SYSTEM**
4. INTEGRATED CAMERA CABLE ASSEMBLY (5.0)	**PER CABLE**
PLUS	
	PER FOOT
5. NTCIP UPGRADE KIT (2.4.5) (OPTIONAL)	**EACH SYSTEM**
6. DIGITAL VIDEO UPGRADE KIT (2.4.6) (OPTIONAL)	**EACH SYSTEM**
7. 2-YEAR EXTENDED WARRANTY (OPTIONAL)	**PER CAMERA**
8. TRAINING SESSION (6.0)	**LUMP SUM**
9. ENGINEERING FIELD SERVICE (8.0)	**PER MAN HOUR**
10. SPECIALIZED TEST EQUIPMENT AND INSTALLATION TOOL KIT (9.1.2)	
11. DISCOUNT ON RELATED EQUIPMENT IN VENDOR CATALOG	

UPLOAD A SEPARATE DOCUMENT LISTING ALL RELATED PARTS/ITEMS THAT MAY BE INCLUDED IN SYSTEMS, ASSEMBLIES, OR KITS WITH REFERENCE TO THE ITEM NUMBERS ABOVE.

BROCHURES DESCRIBING BRAND NAME, FEATURES, AND BENEFITS MAY BE UPLOADED AS A SEPARATE DOCUMENT.

AWARD MAY BE BASED ON ANY COMBINATION OF BID ITEMS.